DOMESTIC ENGINEERING

PUBLISHED EACH SATURDAY
BY

Domestic Engineering (Inc.)

Jno. K. Allen, President and Treasurer.
Elmer Crawford, Vice-President.
Frank P. Keeney, Secretary.
E. D. F. Winslow, Asst. Secretary.

Jno. K. Allen, Editor.

MAIN OFFICES:
49-53 NORTH JEFFERSON STREET, CHICAGO, ILL.

SUBSCRIPTION RATES:

United States, Cuba and Mexico.....$1.00 a year
Canada and Foreign Countries.....$2.00 a year
8 shillings. 8 marks. 10 francs.
Single copies of current issue, 5 cents; copies of back numbers, 10 cents each.

REMITTANCES.—Subscriptions are payable in advance, and remittances should be made by check, Chicago draft, postal or express money order, in favor of DOMESTIC ENGINEERING.

CHANGE OF ADDRESS.—The old address should be given as well as the new, and notice should be received a week in advance of the desired change.

NOTICE TO ADVERTISERS.

Copy and cuts for advertisements intended for a particular issue should reach the office of DOMESTIC ENGINEERING on Wednesday of the previous week if it is desired that a proof of the advertisement shall be submitted. New advertisements can be received up to noon of Wednesday of the week of issue, but no proof can be shown.

Entered as Second-Class Matter at the Post Office at Chicago, Illinois, Under Act of Congress of March 3, 1879.

Member of the Chicago Trade Press Association.
Member of the Federation of the Trade Press Association of the United States.

Whole No. 852. Vol. XLVII. No. 2. Chicago, April 10, 1909.

Suggestion:
Cut out; frame neatly; put in show window; change weekly.

In the plumbing and heating business the same laws are in force which in other businesses operate to bring about success or failure. The use of good goods, bearing the maker's guarantee, accompanied by good workmanship, both charged for at a price which yields a fair rate of profit for capital and skill involved, brings the customer back to our doors repeatedly. The opposite course would bring failure, for this town isn't big enough to let anyone depend on new customers all the time.

Creating Undesirable Competition

Those who manufacture and distribute steam, gas and water goods have much to answer for, both good and evil in its nature. Whatever of progress in invention, whereby economy and safety of operation is vouchsafed to the user, is due to the enterprise of the maker and the business ability of the distributor. And there is a vast deal of credit to be given for this side of our commercial life. All honor to the solid phalanx of men who are trying to improve quality. Let us not forget them when we count up our blessings. But the others! What of them? We cannot forget them if we would, and we would not if we could. They are responsible for all the problems of modern business life. Their desire to **profit by shrewdness rather than ability, by deceit rather than fairness, and by theft of design and idea rather than by investigation and invention,** deserves and receives the condemnation of all right thinking men. Now, why in the name of common sense, do we have these fellows constantly with us? When we are alive to their pestiferous methods, **why do they continue to be in business?** When we know that such methods cannot succeed, how is it that we find those guilty of them **growing more numerous?**

A part of the answer is supplied by Joseph H. Glauber in his presidential address to the brass workers. He said:

"It is with much regret we find when an analysis is made, that the trade in many cases does not conscientiously and actively support the manufacturer, who with heavy investments, by dint, energy and many years of sacrifice, has succeeded in improving his output. The trade, in many instances, encourages the manufacture of shoddy and underweight goods.

"There are distributors or manufacturers' agents, and even jobbers, who I know have encouraged unqualified and inexperienced parties to specialize and manufacture staple lines of plumbing brass goods. A manufacturer of buffing lathes has been induced to make ground key work—a maker of automobile lamps is encouraged and launched into the manufacture of plumbers' brass work, and manufacturers of car boxes have been installed in the manufacture of plumbing supplies."

Mr. Glauber's denunciation of this ill-considered creation of competition is too mild when compared to the damage done. The same evil attacks the wholesale and retail branches of the business, but in another way. Journeymen out of work are encouraged by wholesalers to secure licenses and engage in business—a course for which they are but poorly equipped in business training and still worse provided with capital. But the wholesalers must have outlets for their stocks, and men are started in business who are but parasites clinging helplessly to their creators and passing on to them their losses born of inexperience. In more than one city in this country today the jobbers are in the

business of **financing questionable business enterprises rather than legitimately wholesaling goods.**

And the remedy? It is a personal one and can only be brought about when each one will correct the erroneous views he is himself guilty of entertaining. From within outward will be the course of reform.

Jno. K. Allen.

Method of Fastening a Roof Flange About a Soil or Vent Pipe*

By J. R. Walker, Plumbing Inspector, Waterbury, Conn.

There are several methods employed in making a roof weather-tight where the soil or vent pipe passes through. I will mention a few of the methods with my suggestions for improving same.

First, there is the flange made up in the shop, of a sleeve made to fit tight to the pipe and the base soldered to the sleeve. In order to make it weatherproof there is a band of iron brought around the top of the sleeve and bolted together and the joint between the soil pipe and sleeve is made up of roofing cement or white lead.

Another method adopted by some jobbers is a flange bought from the nearest jobber, composed of copper or galvanized iron base plate, with an adjustable cone and a lead ring on the top. This flange is made weatherproof by caulking the lead ring tight to the soil pipe. This flange will be

How to make a Roof Water-tight about a Soil or Vent Pipe

weatherproof for a little time only, as the expansion and contraction loosens the lead ring from the pipe, thus causing a leak, then the plumber resorts to roof cement or putty.

Another roof flange that can be bought from the jobber is composed of a copper base plate that slides up under the shingles. Then there is a hub cast large enough to permit the plumber to slide his soil pipe through the hub from the inside of the house, and the joint is run the same as the other joints in the house. The disadvantage of this flashing is the plumber is compelled to carry his pot of lead over the roof of the house to run the joint. Another objection to this flange is that a master plumber is compelled to carry on hand several flashings of the same size, but different angle, to meet any pitch of roof.

The most common roof flange is the one made in the shop or on the job, from sheet lead. A base plate with a sleeve soldered to it slides up under the shingles or slate and the sleeve is made slightly larger than the hub of the pipe. The hub of the soil pipe protruding just through the roof on the upper side and the sleeve, is turned over and down inside of the hub. Then a short piece of soil pipe is caulked into the hub.

This method makes a sanitary and weatherproof roof flange, but it has its disadvantage like the rest. The workman is compelled to cross the roof with his pot of hot lead to run the joint. The joint is very troublesome to make tight in testing, as there is danger of cutting the lead flashing in caulking the joint.

Another method commonly used on small galvanized iron vent lines is to take a piece of sheet lead or copper and cut a circle out of the middle large enough to take the pipe. Then the base plate is soldered to the galvanized pipe. This flashing should be discouraged, as it is the poorest method used, the least settling or jar of the pipe destroys the flashing. The solder breaks away from the pipe, thereby causing a leak. The reason this method of flashing is employed is because it is cheap and can be put on very easily.

I believe that there is room for improvement in the roof flange, and for the sake of starting discussion I will make the following suggestions:

Suppose a lead or copper sheet about 15 inches square is used to make the base plate, being large enough to reach up under the shingles or plates. Have the sleeve made large enough so that the soil pipe will pass through with plenty of clearance, this sleeve being soldered to the base plate. Slip down over the soil pipe a cast iron hub, so that it covers the sheet lead sleeve without touching it. For this purpose a double hub could be used if the bead in the middle was cut out. Then make up the joint at the top of the hub in the same manner as other joints in the stack.

With this arrangement many faults inherent in the ordinary methods described above would be eliminated. If the house should settle and the soil pipe remain stationary, or if the pipe should settle and the building not, the flashing would not be injured. Such a flashing will not leak in any weather nor when water overflows in making the

*Read at the fourth annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held at Omaha, Neb., February 8-10, 1909.

water test. It would cost but little more than the arrangements now in use.

The only objection I can see to it is that it requires carrying a pot of melted lead over the roof. This difficulty might be overcome by using the lead ring on the present adjustable flashings with a piece of copper or lead soldered on so that it would completely cover the sleeve down to the base. The lead ring could then be caulked to the pipe and remain stationary in the event of either the house or the stack settling. There would be play enough between the upper half and the lower half so that the flashing would not be strained and so made to leak in wet weather.

Roof Flashings*

By Francis H. Wright, Member of the Society, Sanitary Engineer, Chicago.

Some of the minor essentials of a plumbing system belong to make the construction of the system complete but as they are only indirectly a sanitary necessity they are usually given scant attention and are omitted entirely from some plumbing ordinances.

Few regulations seem to consider the roof flashing as deserving recognition by the inspector. I must myself admit to some doubt as to the duty

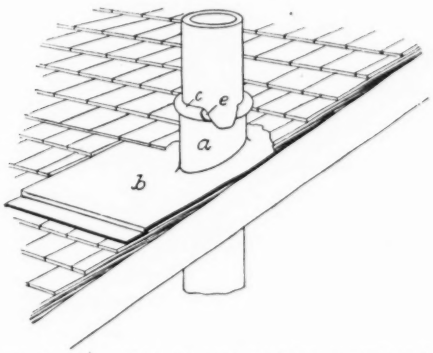


Figure 1. A method of roof flashing recommended by J. J. Cosgrove in "Principles and Practice of Plumbing," which consists of a collar (a) soldered to a flange (b) at the same angle as the pitch of the roof; the top edge of the collar is made tight around the pipe by working a bead (c) tightly around the pipe with a gasket (e) of asbestos packing and white lead between.

of the city in attending to all of these matters for the property owners.

There is no question that roof flashings are indispensable to complete the construction regardless of sanitary reasons. As their use is to prevent water from passing through the roof around the stack they should:

1. Keep out the water.
2. Be equal to the roofing of which they are a part.

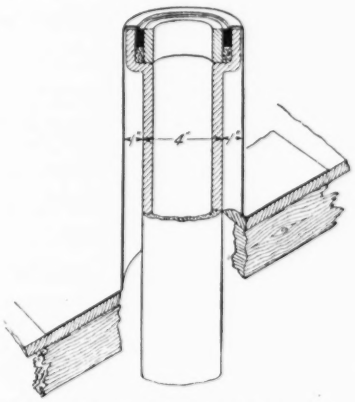


Figure 2. A method of roof flashing recommended by J. J. Cosgrove in "Principles and Practice of Plumbing" for use in severe climates where there is danger of hoar frost stopping the outlet of the stack. The pipe extends about 12" above the roof; the opening through the roof is made 2" larger than the pipe so that there will be a one-inch space all around it. The collar of the flashing is made the same size as the hole in the roof and is turned over and calked into the top of the stack, providing an air space around the pipe that is open to the attic, and keeps the temperature of the exposed pipe at about the same temperature as the inside of the building.

1. Will require them to conform to the style of the roof as regards pitch and the manner in which the roofing is laid.

If the roof is shingled the flashing should extend above the stack under the shingles until a good connection to the sheathing is made.

Should plumbing ordinances cover these features of the roof-flange?

It should cover enough tiers of shingles below and at each side of the stack to insure the removal of all drainage from the stack opening.

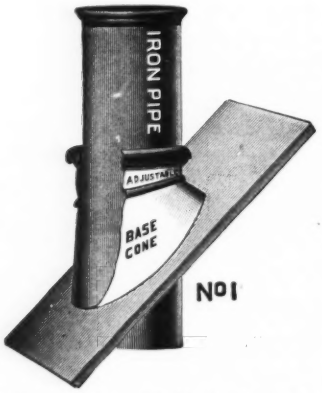
If a general dimension is specified it should be governed by that necessary for the least probable pitch of the roof.

The height of the collar surrounding the stack should not be less than six inches above the flashing on the upper side of the stack as a low collar

*Read at the fourth annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held at Omaha, Neb., February 8-10, 1909.

would permit the deflection of the drainage against the stack above the collar.

With these precautions I do not think that a joint with a gasket between the stack and the collar is imperative as an appreciable quantity of water



Common type of adjustable roof flashing on the market at the present time, made of copper and galvanized iron.

could not enter in this way through an ordinary close joint.

In flat roofs, however, where more could accumulate it would be advisable to use a gasket and a higher collar.

Mr. Cosgrove shows sketches of two types of flashing on pages 37 and 38 of his "Principles and Practice of Plumbing." (See Figs. 1 and 2.)

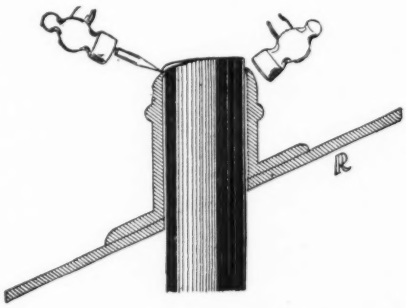
One of these is shown with an air space around the stack to interfere with the formation of hoar frost in the stack.

This seems to me to be an excellent arrangement and if effective could reasonably be considered a sanitary necessity, and as such would be a part of an ordinance.

In passing this point I wish to state that I have some doubts about the formation of any amount of frost in stacks to systems that have no main trap.

2. *The material of which flashings are made* would not necessarily be the same for all cases.

Shingled roofs are usually well pitched and are covered with wood, tin, steel, asbestos, slate or cement shingles and protect buildings ranging from ordinary to fire-proof construction. Flat roofs are made of everything from wood to reinforced concrete and are waterproofed with a variety of materials in various ways. Owing to the fact that roof coverings require frequent repairs and renewals after a while the flashing around the stack will require the attention of the roofer, and for that reason where practicable should be of a similar material to the roof covering.



Another common type of roof flashing made entirely of lead and for either pitched or flat roofs.

Flashings can therefore properly be either of tin, zinc, lead, copper or even roofing felt, according to the construction of which they are a part.

I am somewhat partial to lead flashings for general purposes on good construction, but think only copper or asbestos felt should be used on fire-proof buildings. The writer would like to hear of any observations as to the depth of snow on flat roofs around stacks, of the amount of frost formed in stacks on different systems, of leaks around stacks and their causes, if known.

An attractive interior display of plumbing goods made by the Brambleton Hardware & Plumbing Co., of Norfolk, Va.

Magnesium is now being employed to some extent as a deoxidizer in brass manufacture, having the advantage over phosphorus that an excess may be used without harm, and, indeed, may improve the quality of the brass, says "Scientific American." Magnesium is a metal which belongs to the same family as zinc. Ordinarily the addition of 0.05 per cent of magnesium to the brass is sufficient for deoxidizing purposes.

Some Later Applications of Electricity in Moving Fans for Ventilation

By Carl S. Dow.

Ventilation pays. Some recent experiments and tests made by Professor Winslow of the Massachusetts Institute of Technology show conclusively that ventilation does pay from a financial standpoint. That it pays from the physical standpoint, there can be no question. In one factory in which Prof. Winslow made tests, the introduction of plenty of fresh air reduced to one-half the absences of the girl operatives. What was done in this particular instance indicates what can be done in other directions.

Poor ventilation not only robs us of energy, causing a feeling of temporary discomfort, but is liable to produce results of a far more serious nature. When people continue to live in a stifling atmosphere the health becomes permanently impaired and life seems to be a burden. If these conditions are not changed there is a noticeable decrease in energy

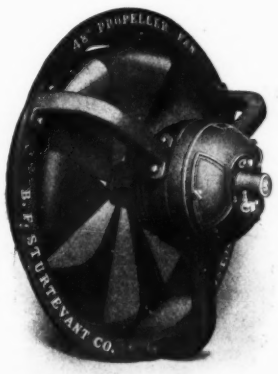


Fig. 1. A propeller fan driven by direct connected electric motor, suited primarily for removing large volumes of air from apartments, exhausting directly through wall openings.

and greater susceptibility to disease and a shorter life, even though death is not sudden.

While pure air has been known to be necessary to life and vigor, the subject has not been considered with sufficient seriousness until recent years, and even now too many people are ignorant or careless in this respect. Although it may be said that conditions are now steadily improving, yet the feeling that ventilation is a luxury instead of a necessity is altogether too prevalent.

Another wrong idea is that the stirring up of air produces ventilation. Air does not become pure or fresh by setting it in motion and whirling it around the room, although apparently it is cooler due to the air currents; but cool air is not necessarily pure.

There is a vast difference between real ventilation and apparent ventilation. To produce real ventilation the overheated air must be removed and

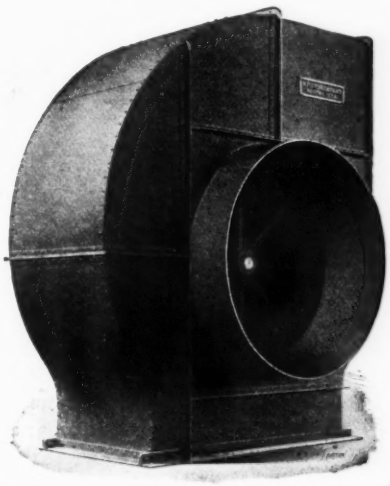


Fig. 2. Cased fan revolving within a steel-plated spiral case, for use in systems with ducts and passages.

fresh air substituted. In no other practicable way can the atmosphere be made healthful.

Real ventilation has become a recognized necessity in hospitals, apartment-houses, hotels, and clubs as well as in theatres, school-houses, and public buildings. While not perhaps as necessary, ventilation in the home is extremely desirable and is readily obtained from some of the latest devices. While the large buildings in cities require mechanical ventilation, such places as mines, tunnels, and subways also must be supplied with fresh air, for in these modern days there is not sufficient room on the surface for transportation and the foul air and gases must be removed from underground passages. The same general conditions exist in large ocean liners and battleships, for the lower apartments of some of the larger vessels would hardly be habitable were it not for mechanical ventilation.

The method of obtaining proper ventilation depends upon circumstances. In some few cases natural or window ventilation proves adequate but except under very favorable conditions as to the direction and strength of natural breezes the process is slow and insufficient. To be

satisfactory, ventilation must be positive and produced mechanically. For this fan wheels of various types are commonly used, the kind depending upon such conditions as the location of the apartment to be ventilated; the draft that must be maintained, or, in other words, the

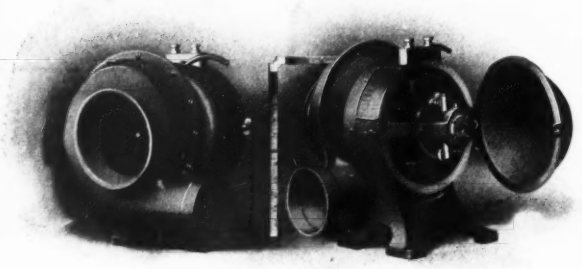


Fig. 3. A small cased electrically operated fan, of light weight, readily carried from place to place, providing local ventilation when and where needed.

velocity the air must have to overcome the frictional resistance of the flues; the frequency with which air must be changed in a given time; and the means of supplying the fan with power.

In these days when electric light is so common, a large majority of buildings can readily be ventilated by electric fans, and such fans are being used more and more extensively as the simplicity and convenience become appreciated.

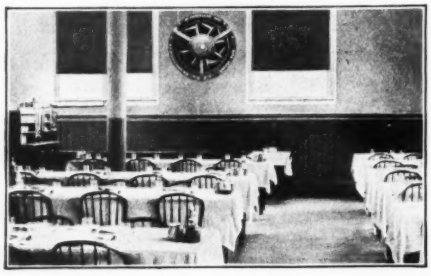


Fig. 4. Application of electrically propelled fan in ventilating restaurant.

Fans for ventilation may perhaps be identified in three general classes and discussed briefly under these three headings.

First. There is the fan of the well-known disc or propeller type, a fan which is suited primarily to the removel of large volumes of air from apartments, the conditions being such that the air may be exhausted directly through an aperture in the walls. (Fig. 1.)

Second. There is the cased fan which consists of a wheel revolving within a spiral case. This fan is used in systems having ducts and passages which impose resistance to the flow of air. (Fig 2.)

The third. A very small fan which is of the cased type and which is a self-contained unit of such light weight that it may be readily carried from place to place, thus providing for local ventilation. (Fig 3.)

The propeller fan (Fig. 1) is made up of curved blades fastened to a shaft. The action of these blades is similar to that of a screw propeller, that is, it passes the air in lines practically parallel to the shaft and handles large volumes with a very slight expenditure of power; in fact, for passing large volumes with little resistance the propeller fan is the most economical type. These fans, however,

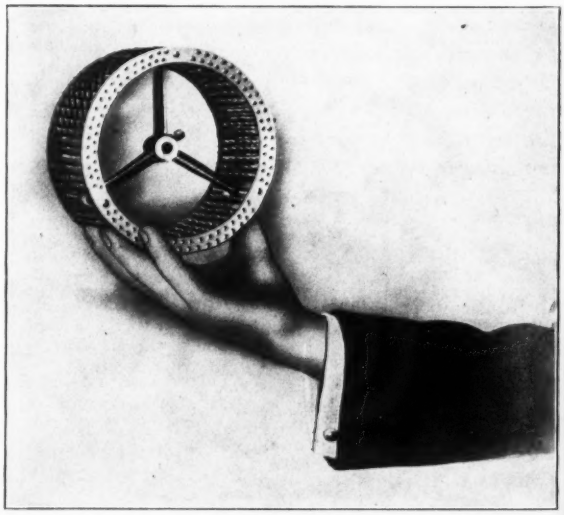


Fig. 5. The fan wheel used in the "ready-to-run" local ventilating set.

can be run at moderate speed only and are not what may be termed powerful machines; in other words, they will not handle air against large resistance and the allowable resistance to operation is usually limited to about one ounce per square inch.

The propeller fan is easily installed in an opening in the wall or ceiling (Fig. 4) and when driven by an electric motor is of great utility. The fan with its direct-connected motor may be placed in the most advantageous location while the starting switch or rheostat can be conveniently placed in any other part of the building. The fact that there is likely to be considerable distance between the fan and the rheostat makes it necessary to equip the fan with an automatic device which will open the cir-

cuit if the supply of current be temporarily interrupted. This device prevents damage to the motor in case the full current is suddenly turned on; or stated another way, when the current is interrupted a magnet causes the handle of the rheostat to fly back to the no-voltage position so that when the current is turned on the fan will not operate but must be started by moving the handle of the rheostat.

The motors commonly used with propeller fans are entirely enclosed so that they will be dustproof. This means to the electrical engineer that the motor selected must be of larger size than would be necessary if it were of the open type to offset the lack of ventilation and consequent increase of heat in the armature.

The cased fan (Fig. 2) consists of a wheel with a large number of plates or vanes which is made to revolve rapidly within a casing made up of steel plate. The air enters at the center of the wheel and is discharged at the periphery, the pressure accumulating as the wheel revolves until the air reaches the outlet which is tangential. Fans of this type are built in very large size to handle the large volumes necessary in public buildings, schoolhouses, mines, tunnels, etc.

They may be driven by a belt run to a pulley on the shaft, or they may have an electric motor or steam engine placed on the shaft. The method of driving will depend upon local conditions. When used in connection with a heater the fan is often driven by a steam engine for the steam is available on account of the heater, and although a small steam engine is not economical, the exhaust steam is used in the heater thus greatly reducing expense of driving the fan. In fact, the expense of operation under these conditions is so slight that it may be neglected.

Fig. 8. Removing tobacco smoke from drawing room by a "ready-to-run" electric ventilating set.

The cased type of fan just mentioned requires considerable labor in installation and when once placed in position is suitable for ventilating only in the apartment in which it is placed or to which it is connected by ducts. In many factories, powerhouses, and in some residences there is frequently occasion for local ventilation. In case of factories there is a demand for a current of air for such

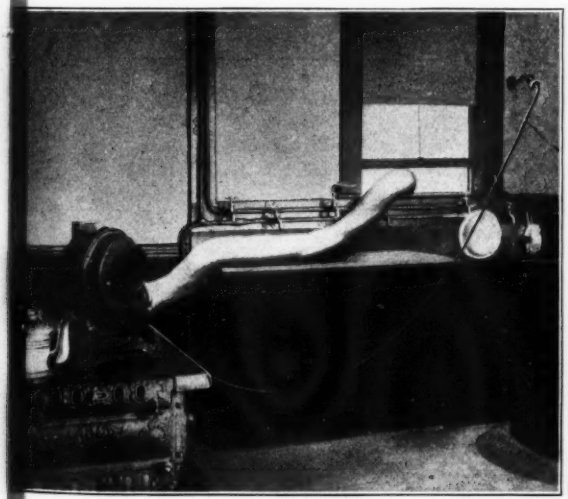


Fig. 6. A "ready-to-run" ventilating set exhausting cooking fumes from kitchen.

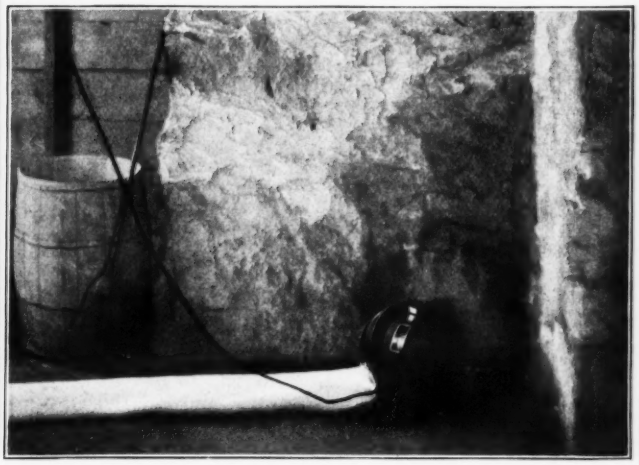


Fig. 7. Corner of a cellar being ventilated or dried out by a "ready-to-run" electric ventilating set.

purposes as the cleaning of dust from machines. For this work a small portable electric ventilating set is on the market (Fig. 3) and as this set weighs less than fifty pounds it is easily carried from room

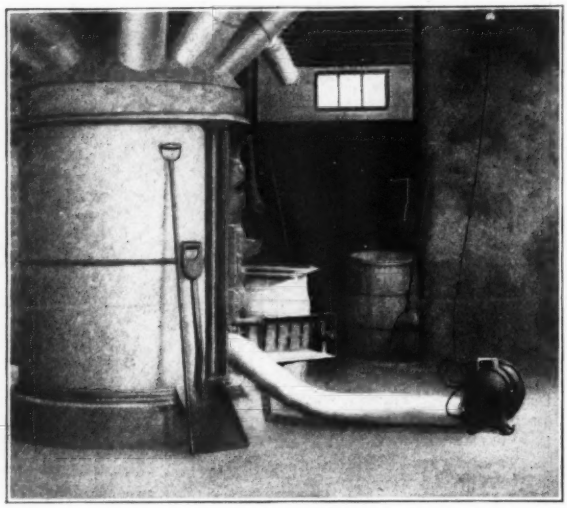


Fig. 9. Forced draft in a warm air furnace induced by a "ready-to-run" electric ventilating set.

to room, no installation being required. The motor is provided with a long cord which may be attached to the electric-light circuit in place of a lamp, and after placing the flexible canvas hose so that air

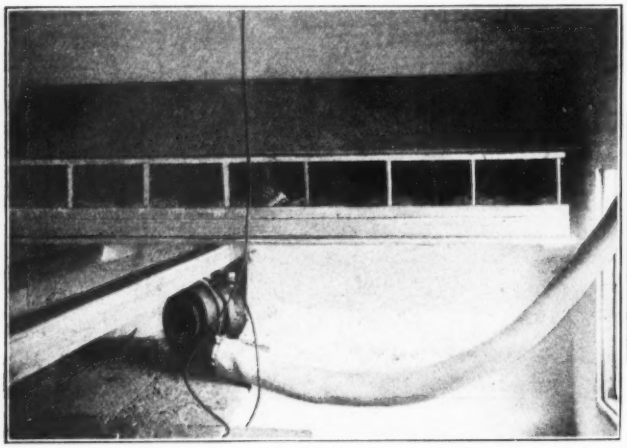


Fig. 10. One of many uses for ventilation. A "ready-to-run" electric ventilating set in a chicken house.

will be discharged at the desired point, the fan is ready for operation. Turning the switch or key on the electric-light socket will start the fan at a speed of more than 2000 revolutions a minute which will create a blast of air of considerable strength.

These small sets will deliver 450 cubic feet of air per minute when using current equivalent to only three 16-candle-power lamps. Thus for a moderate size room the fan will exhaust the air in ten or fifteen minutes, the cost for power not usually exceeding one cent. The fan and motor are absolutely noiseless and nicely balanced with a spreading base so that the set may be placed anywhere without danger of falling over.

Around the house these sets find favor with all members of the household. The parlor or sitting room may be quickly freed from tobacco smoke, the kitchen relieved of cooking odors, and in case the draft for the furnace is inefficient the set may be taken to the cellar and the draft so quickly accelerated that patient waiting is no longer required. It has been found of great convenience in the sick room, and for such small quarters as motor-boat cabins, telephone booths, etc., it is much appreciated. The great advantage of this type over the desk fans lies in the complete removal of over-heated air instead of a constant stirring up of the air.

Factory Plumbing

By O. B. Craig, Mem. Am. Soc. Insp. Plb. and San. Eng., of Pittsburg, Pa.

In the selection of plumbing fixtures for a factory building very much depends upon the local conditions, such as the **position, number** and **size** of the **toilet rooms, conditions of water supply, characteristics of the men** who will use them and the **amount of investment** by the owners.

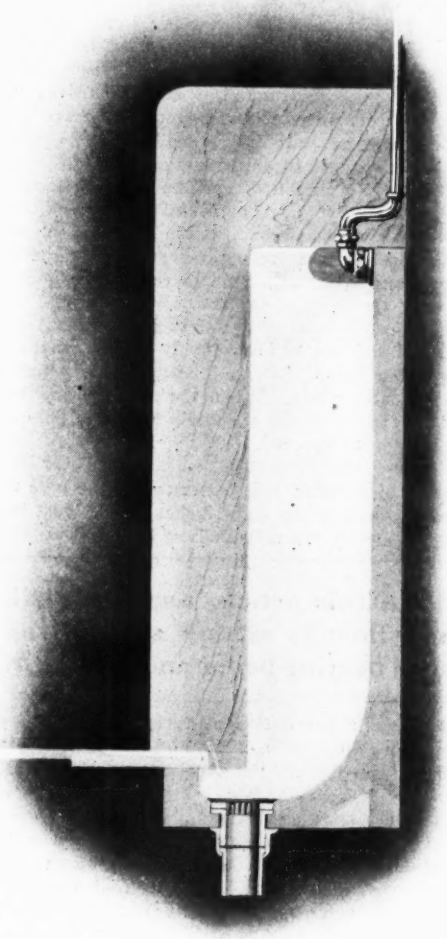
In "Domestic Engineering" for Feb. 27, 1909, we published a request for sanitary engineering advice as to the best plumbing installation for a factory building in which valves and fittings would be made. Numbers of our readers responded and this is the first of a series of replies which will be published.

I have always argued that large, airy and well lighted toilet rooms, properly equipped with modern sanitary fixtures and kept in a clean condition by certain employes delegated to the work **are a good investment for the employer.** Experience has demonstrated that given proper sanitary toilet facilities, the **personnel of the average workman is much improved, his self respect is increased** and he is much **more disposed to cleanliness** in his personal habits, than when his toilet facilities are neglected, as happens in many large factory buildings. I do not mean by this that

the toilet rooms should be extravagant, with a showy display of polished nickel and marble and mahogany, but **they should have plenty of outside light and ventilation, with modest but thoroughly sanitary fixtures** and above all **should be kept absolutely clean.**

Washing Facilities.

I do not wonder that the men in the old factory referred to in a recent article preferred the individual

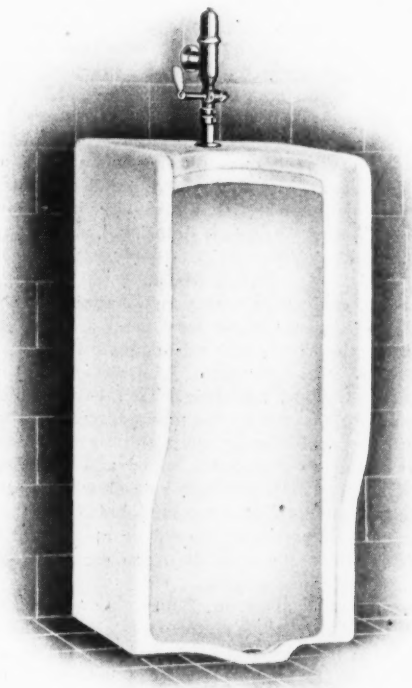


A urinal suggested by a correspondent as being well adapted for factory purposes. He would place these in batteries of from two to four, flushed by an automatic urinal tank. It is known as Trenton Potteries Co.'s 500 K.

wash bucket to the wash sink, for **no self respecting man cares to wash in the same water that is used by his neighbor.** For washing facilities for factory employes, I know of no better nor more sanitary fixture than what is known as the "barrack lavatory," as manufactured by several of the larger pottery concerns. These can be obtained in "double battery," set back to back, on a strong frame of galvanized iron, with the water supply pipes running exposed between, or in single battery for placing along the wall of the room. The bowls, made of solid porcelain or buff colonial ware, the latter being preferable, are strong, heavy and deep, and, being non-absorbent and without joints, corners or dirt pockets, are thoroughly sanitary. As there are no slabs or flat surfaces for the lodgement of dirty water splashings, they are much easier to keep clean than the ordinary style of lavatory and they occupy less space. Water should be furnished through Crown handle self-closing cocks.

Urinals.

The 500-K urinal suggested by Mr. Farley is a very good one and as nearly sanitary as any urinal offered, but I think the 510-K (Trenton Potteries) would make a more satisfactory job if obtained with the sides



Type of urinal Mr. Craig prefers for factory purposes. It should be obtained with the sides ground true and set close together, with almost an invisible joint between, and flushed from an automatic flushing tank. This is Trenton Potteries Co.'s 510 K.

ground true and set close together with an almost invisible joint between. The urinals should be flushed from an automatic flushing tank of enameled iron or vitreous china, one tank to each two or three urinals. The objection offered that dirt from the workmen's shoes might clog the urinal outlets, I don't think holds good, as it would require an enormous accumulation

of dirt to cause such an effect, and the owner must surely intend to give his toilet rooms some little attention by making provision for cleaning them thoroughly at least once per day.

Water Closets.

For water closets, by all means avoid the "latrine." Individual closets with heavy vitreous china, syphon jet or syphon wash down bowls with integral seats make a very sanitary fixture. For flushing the closets, the seat action principle should be avoided, on account of its complications and liability to get out of order under hard usage, and of course would not be applied where the seat is integral with the bowl. A very simple and eminently satisfactory plan is to provide for each bowl a high pattern automatic flushing tank of enameled iron with slow filling ball cock, controlled by a lock shield stop cock, with a lock shield valve controlling the entire range. The stop cock can be so set as to cause each closet to flush automatically every five or ten minutes, as may be desired, and at night or during shut-down periods, the main valve can be closed, shutting off the entire range of closets. The high tank gives a better "flush" with less water than the low pattern and being beyond convenient reach is not so liable to be tampered with.

Another very good plan is to install with each bowl a thoroughly tried and tested flushometer valve. There are a few very good ones on the market, and a host of worthless ones, and the owner should examine carefully and satisfy himself that the valve he adopts will do the work and "keep on doing it," under any and all conditions.

Closet Stalls.

For closet enclosures a very substantial partition can be made of 12-gauge sheet steel, with a 1-inch slotted pipe along the front and top edges using a slotted elbow where the two pipes join and flanges where they engage the wall and floor. The sheet steel should be driven into the slot in the pipe and riveted through, and the rear or wall edge of the sheet turned 1 inch wide at right angles to the sheet, drilled and bolted to the wall—45° braces of 5/16 round iron should be attached to each side of each partition and bolted to the wall. Bottom edge of partitions should be at least 12 inches from floor and the use of doors to each enclosure is discouraged as unnecessary.

Interior Finish.

Finally, all walls, ceilings and closet enclosures should be painted a pure white and finished in a gloss or enamel finish, which resists the lodgement of dirt to a great extent and can be readily cleaned. **The cleanly appearance of a white toilet room encourages the workman in cleanly habits and induces in him a proper respect for the toilet fixtures which might not be apparent were the room dark and dingy.**

"What!" shouts the patron of the restaurant. "Fifteen dollars for coffee and rolls! It's outrageous, I won't pay it."

"Yes, you will," calmly states the proprietor. "My wife went into your millinery shop yesterday and paid $50 for some wire frame, covered with two feet of lace and an artificial rose. Now, you see how it feels, don't you?"—Judge.

Setting up the Boiler

By Phoenix

Many years ago nearly all heating boilers were bricked in, but the modern portable house heating boiler does not require this additional expense, which generally ran from $12 to $25.

In starting to set up the boiler it **is best to begin with the freight house.** Go there and view the boiler. **Take a bolt or hammer and sound the different sections.** If one is cracked you can very easily detect it and you are then on the spot and in a position **to demand a settlement from the railroad company.** Check over the freight bill and see that you have all that is coming to you. This done and everything satisfactorily accounted for, load the boiler upon a dray and start for the job, and upon arriving there **drive up to the cellar door, or nearest point at which you can get to where the boiler will be set.** Lay some planks lengthways upon the cellar stairs so the sections will slide down easily. A piece of one-inch rope about fifteen or twenty feet long will be found very useful at this point. Tie one end of the rope securely into the section. Now **two men are all that are necessary in the game right here, and any more would be in the way.** One man standing at the head of the stairs with the rope in his hands can easily control the descent of each section. The second man can be immediately in front of the section to joggle it a bit in case it sticks, or runs into the cellar wall and sticks. When the sections and boxes containing the trimmings are safely landed in the cellar, you are ready to proceed.

In case the cellar bottom is cemented and you have a reasonably high cellar, **it is better to put the base upon a raised foundation,** say eight inches high. Most house heating boilers have a very shallow base and in setting

Read this article and you will know how to set up a cast iron house heating boiler and do it right

a boiler upon a foundation made in this manner you secure a much deeper ash pit and **avoid having any burned out grates,** from the over-accumulation of ashes later on.

In case the cellar bottom is not cemented or bricked, and there is no danger of water coming in, I would dig down about twelve inches and put in about three or four inches of concrete and lay my brick around the outer edge in such a manner as to catch the rim of the base.

Place your base upon the foundation, **leveling it up,** and **do not put any more load upon the foundation until it has "set."** Then place the grates in the base section.

In setting up an ordinary house boiler the fitter and helper will be sufficient to handle the sections, either by sheer muscle or with the aid of block and tackle. On the heavier sectional boilers by using a block and tackle a third man may be necessary for about half a day. **The front section should be erected in place first.** It is easier in case you have a push nipple boiler, to pull the remaining sections up to the front section—

which is in proper position upon the front of the base, than it is to shift the whole boiler forward upon the base after you have it drawn together, **as is the case when you start with the back section.** The surfaces of the boiler which take the push nipples, and the push nipples themselves **should now be thoroughly cleaned** with a piece of old emery paper and then oiled lightly with good lard oil. Insert the push nipples and get the second section into place, being sure to so level it on the base that the holes are in exact line with the projecting nipples from the first section, and then catch the section upon the push nipples.

Place a 2x4 at the back of the second section and with a sledge drive it upon the nipples. The first section has been braced firmly in front with plank, so that it cannot fall forward. Then slide your rods through both sections and pull the sections together. This can be done in three different ways:

First, by having rods of different lengths to catch each additional section.

Second, by using the rods sent with the boiler, and making long troughs, or wooden washers which will cover the unthreaded portion of the rod which projects. This wooden washer will bear at one end on the face of the boiler, while the other end comes up to the threaded end of the rod.

Third, **by obtaining some push nipple vise which may be very handily and conveniently used for this purpose.**

Follow up this method with each section until all are in place upon the base, being sure that each section lines up correctly at the point of the push nipples, so that when the final pull comes, when the sections are drawn together, the sections will move in a straight line. If they do not, a cracked section may be the result.

Possibly you are using a different type of boiler upon this job, one connected up by means of **headers, screw nipples and lock nuts.** In such a case begin, as before, by setting up and bracing firmly the first section and then shift each succeeding section into place. Then put the lock nuts upon the nipples and the nipples into the headers, letting the first and last nipples of each header project about half an inch more than the others.

Raise the top header into place and catch the first and last nipples. Shift the remaining sections with a pinch bar until all the nipples on top are caught. Do not yet send them home.

Catch both side headers in a similar manner, refraining from screwing up tightly any nipple. Then start at the front and give each nipple on the first section one or two turns. You are backing off on the long or running thread and screwing upon the other and pretty soon the nipple will bind; then pass to the second section, treating it in a similar manner; continue until you have been over the boiler once. **Then start again at the first section.** It may be necessary to go over the boiler in this manner several times before nipple ends which enter the sections are sufficiently tight. When you feel that these are sufficiently sent home, pack the lock nuts. **Do not attempt to make up this lock nut joint with only one packing.** Asbestos wicking is better. Oil it and wrap three or four turns around the nipple close to the header, and screw down the lock nut reasonably tight. **Then unscrew the lock nut and** add two or three (or possibly more) turns of the wicking, after which screw up the lock nut. These lock nuts will probably have to be tightened some when the boiler is fired up.

There are other types of boilers, among which is the vertical, coming in sections of the dome, one, two or three water rings, the fire pot and the base.

The base may be set according to previous directions. Roll the fire pot to the side of the base and tip it over into place. The rings generally are connected to top of the fire pot with one 6-inch screw nipple, which comes made into the rings. It is easier, in case you have no tackle, to **lift the rings and rest them upon a barrel,** by the side of the fire pot, and then make a second lift of the rings directly to top of fire pot.

Put a 2x4 into the door of the fire pot (to keep it from turning) and then screw down the sections by means of another 2x4 held in place by pieces of pipe caught in the flues. After the rings are made up, follow the same method with the dome.

This type of boiler can be set up (on a cement floor) **ready to run the mains in less than one hour,** and "trimmed" at your leisure. Then apply the iron cement, thoroughly stopping up all the cracks between the sections of the boilers.

In all types mentioned the water glass should be so placed that when the water in the glass shows it to be half-full, this height will allow the top flues of the boiler to be covered wtih two inches of water.

Then put on the doors, blow off and damper regulator. This regulator should be so adjusted that the chain on the front end opens the front or draft door when the chain on the rear permits the check draft door to fall. It may be necessary to use pulleys in order to bring about this desired operation.

Now put on the gauge cocks, steam gauge, water glass and smoke pipe. Get out the necessary pieces of supply and return mains and connect them and make the necessary connection to supply the water.

Fill the boiler and look it over for leaks.

If none appear and the rest of the system is ready, **start a slow fire. At this point the boiler will begin to** "sweat" and an inexperienced person will believe that there are about fifty leaks inside that boiler. **"But not."**

As soon as the water heats up this sweating will cease and after you have tested out the job thoroughly, **blow off the boiler.** Do this by getting up ten or fifteen pounds of steam with a light wood fire, which pull before starting to blow off. Then turn on the draw-off cock and let all the water and steam escape. It may be necessary to do this two or three times before the job is thoroughly cleaned from all the dirt, grease and chips which have accumulated inside the pipes, boiler and radiators.

The smoke pipe should be covered with wire netting and asbestos cement plastered upon it roughly. After this cement has dried, put on another coat and trowel it down smoothly. The boiler should be covered with cement put on in three different coats as described in a previous article.

The last coat may contain some Portland cement, which will give a much harder outer finish. After this is thoroughly dried, it may be painted and will then last for years. The remaining portions of the boiler should be painted frequently with black asphaltum paint.

HOW A PLUMBER MEETS MAIL ORDER COMPETITION.

Never mind the poor printing. Read the matter. One plumbing house in the United States at least, has benefited by our attacks upon the mail order house as will be shown by the reproduction of a full page advertisement recently inserted in their local paper. The Spencer Plumbing Co., Spencer, Owen county, Ind., does not believe in having trade in their territory taken away from them by mail order houses and we have no doubt that their enterprise in inserting this advertisement in their local paper, not only checked this form of competition but brought very much new business to them.

Thursday Feb. 15, 1912 OWEN COUNTY DEMOCRAT Page 5

Mail Order Houses Beaten To A Stand Still.

WHY? BECAUSE

FIRST.

We can furnish you anything in our line that a Mail Order House Can Furnish.

SECOND.

We keep the goods right here at home for your convenience. You are not asked to buy them from an elaborate description and highly colored picture or pay for them in advance and then take what they send you, but you can come to our show room where you may sit on a comfortable chair by a warm fire and select your goods from a nice, clean stock before you, and after you find the articles wanted you are not asked to pay one cent or make a deposit until you have the goods installed in your own home, and they are giving satisfaction. Where is the MAIL ORDER HOUSE that will do that. But you must send money in advance, pay all charges and then take all chances of getting defective goods.

THIRD.

When you buy of us you get protection from defects, for we are frank with you and tell you that when you buy a Second grade article we do not guarantee it against defects, but we do positively guarantee our first grade goods, which, by the way is all that we carry in stock, but can get the Mail Order kind if you desire it and will sell it at the same price as they, and you don't pay the freight or in advance but pay when you get goods.

FOURTH.

When you deal with the Mail Order House you are dealing with strangers, people whom you don't know neither do they care to know you further than your address. Not so when you trade with us. We want your acquaintance and your friendship because we are neighbors and are interested in your welfare; we are interested in this community. We live here, have our money invested here, pay taxes, insurance, in fact spend our time and money in this community for its benefit, while the money sent to the catalogue houses is, as far as this community is concerned, put out of circulation. A good creed to follow is this: "Never buy out of town what you can buy of your home merchant."

FIFTH. We have a larger stock than any catalogue house in existence; if you don't believe it give us a chance to prove it. We can furnish anything in our line that a catalogue house can and at prices equally low and in a way much more satisfactory to the purchaser

SIXTH.

We have in stock everything usually kept in an up to-date Plumbing and heating establishment. We have Bath Tubs, Lavatories (or Washstands), Water Closets, boilers for heating water or heating a building. We have pipe, all sizes, and fittings, sewer pipe, brass goods of all kinds. We can cut and thread pipe from 1-4 up to 4 inches. Can furnish complete pneumatic water outfit for suburban homes. We have had 23 years of practical experience in towns of over 4,000 inhabitants to cities of 100,000 inhabitants and can give you a practical, neat and durable job. Give us a trial and an opportunity to demonstrate our ability to serve your wants. We are located on the East side of the Public Square adjoining the Hotel Laymon, Spencer, Ind., and have the only plumbing shop in Owen county.

Central Union Telephone, and will be connected with the Farmers' Exchange, March 1st, for the benefit of out-town customers. Awaiting your commands we are respectfully,

The Spencer Plumbing Company,

W. P. EICHENLAUB, Proprietor.

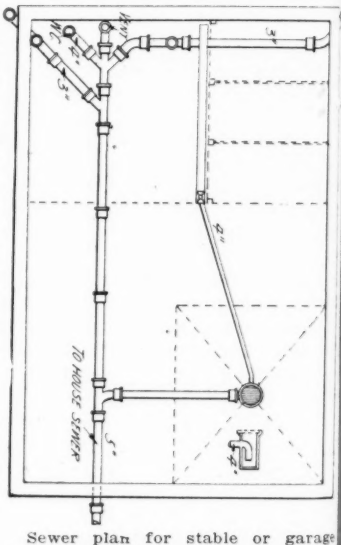
A BEAUTIFUL SPOT.

South Pasadena, Cal.—The illustration shows the shop of the Central Plumbing Company, which is nicely located under the shade of live oak trees. The artistic building in the center of the picture is a fountain for man and beast and is the gift of the good women of this town. The Central Plumbing Company is a new concern, consisting of S. Russell Oates, a native of old England, for eight years secretary of the Journeymen Plumbers' Union in Pennsylvania and previous to that time employed at Cleveland, O., and Ted Brumfitte, who recently joined the order of Benedicts, his bride coming to the wedding from a distance of eight thousand miles, six thousand of which were by water.

Who could not do business in a place so beautiful as this? Central Plumbing Co.'s establishment at South-Pasadena, Calif.

A SEWER PLAN FOR A STABLE, VEHICLE HOUSE OR GARAGE.

Frank Dumond, Inspector of Plumbing, Rochester, N. Y., recommends this plan of sewering a stable, vehicle house or garage. It will be noted that the floor drains to the carriage wash, underneath which is placed (as required by the plumbing rules and regulations) a mud trap with a 4-inch elbow with downward opening, wasting through a 4-inch extra heavy cast iron pipe in to a 5-inch extra heavy cast iron drain leading to the house sewer. The mud trap is covered with a grating. Into this mud trap also flows through a 4-inch extra heavy cast iron pipe the drainage from the rear of three stalls. The rain water leaders are brought from either corner of the exterior through the basement wall in a 3-inch extra heavy cast iron drain leading into the main house drain. The main house drain continues as the main vent up through and above the roof. The water closet connection is made with 4-inch pipe. Two cleanouts are provided on the rain water leaders and presumably one would be placed on the main house drain.



Sewer plan for stable or garage recommended by Plumbing Inspector Frank Dumond, of Rochester, N. Y.

Questions and Answers

WHY NOT CROWN VENTING?

129.—**Saratoga Springs, N. Y.**—To the Editor of "Domestic Engineering." Sir: I notice in your issue of March 13 that the Sanitary Committee of the New York State Association of Master Plumbers made the following recommendation: "The venting of traps from the crown should be abolished, and circuit, or continuous, venting be used." May I ask why this radical change from a practice which has obtained in the plumbing trade for many years? Very truly yours,

R. J. B.

There are two reasons why venting traps from the crown is not the better way. One reason is that the nearer the vent is to the water seal the greater the evaporation of the water in the trap will become.

The other reason is that if there is much solid matter, such as grease, lint, hair, etc., in the waste, the

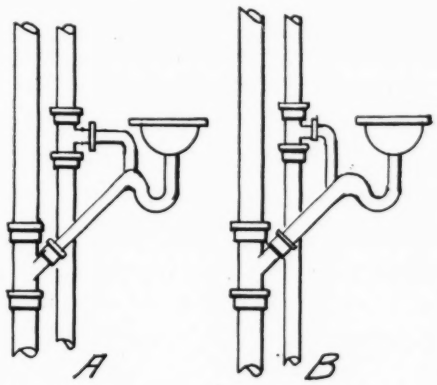


Fig. 1.

vent opening, if connected directly to the crown of the trap, is apt to become entirely stopped. When W. J. Freaney, now a master plumber of Indianapolis, was plumbing inspector of St. Paul, Minn., he made an examination of vent openings from fixture traps and found that out of twenty-three traps from kitchen sinks, twelve were completely obstructed with grease, ten partially obstructed, and one perfectly clear, and this one had been regularly inspected and cleaned. The illustration shows clearly why venting from a short distance below the crown of the trap is better than taking the vent directly from the crown. A still better method of venting a lavatory is shown in Figure 2, which is the loop, or circuit, method, which seems to be rapidly gaining ground in plumbing work. These are some of the reasons why in this particular case it is better: It permits the use of the half-S trap instead of the full-S trap, which is less subject to syphonage; the long outlet arm of the full-S trap greatly increases the syphonic action; the vent is farther away from the seal of the trap than would be the case if it were taken directly from the crown, and this decreases the evaporation of the water in the seal of the trap; the waste connection is shorter than would be the case if the long-S trap were used and the waste taken to the floor; by this method of combining waste and vent a separate entrance into the main

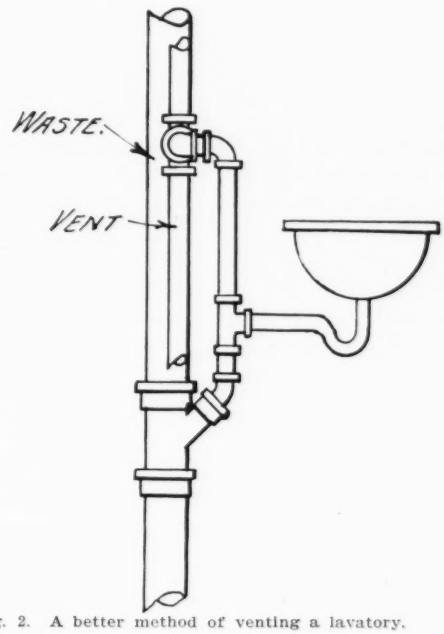


Fig. 2. A better method of venting a lavatory.

waste or soil pipe is always available and the action of the other fixtures in the bathroom has no effect upon the seal of the lavatory trap.

HOW TO PUT A PLUMBING BUSINESS ON A GOOD BASIS.

Toledo, O.—To the Editor of "Domestic Engineering." Sir: It always gives me pleasure to say anything which will elevate the plumbing business. Here are some of my ideas of a few of the evils which cause the downfall of the master plumber of today:

1. System: The lack of system is the cause of more failures than almost any other one thing. The use of system in the plumbing business will be of more benefit than an organization whose aim is to boost prices.

2. Running Expense: One of the principal items overlooked by plumbers is running expense on contract work. In making this statement I do so with the full knowledge that it will not be agreed with by all who are in business. This disagreement will come not because of my inaccuracy, but from a general disagreement with the principle. The aversion to systematic accounting which seems to govern all in the trade is still stronger against this item of the general expense of doing business. It would seem that plumbers and steamfitters in business today, taking the class as a whole, fear most of all to have a record in black and white of all their operations. My judgment is that this fear is due to the belief that it costs too much to

keep these records. Many men say that they do not need records of their business because they know just what is going on.

Bow down, ye humble ones, to these mighty men of brains, and after you are through bowing, go back to your office and set your bookkeeper at work on the best business system that will enable you to do things right.

What Is General Expense? Of course, material used on any job is chargeable direct to the job. The cost of labor of installing this material in its proper place at the job is also chargeable directly to that job. Is the total of these two sums the cost of the job? Far from it! To this total there should be added the expense of overseeing the job, of supplying a shop to get out the material, of a team to cart material, of the office to keep track of the work, of the tools to work with and the endless details that are necessary to the running of a business.

No stated amount of this general expense can be charged directly to any one job, for there is no way to tell exactly what the proportion of the total general expense should be for any one job; but it is important to have this expense represented in the cost of each job, as it is just as much a part of the total cost as the labor required to perform the actual work. For every dollar spent on labor a part of a dollar is spent to supply what is necessary for this laborer to operate with. This expense will vary from month to month.

The only way I know of which will proportionate the running expense and the cost of doing business is, to illustrate:

Suppose a master plumber and steamfitter spent for tools, equipment, repairs, etc., $85 in the month of February and during that same month its labor bill was $642. By figuring, we find that it cost for running expenses thirteen cents to take care of a dollar's worth of labor. Most master plumbers and steamfitters are afraid to charge this running expense to jobs and put it in on the contract. If they were willing to do this they would make more money. Very truly yours,

Jno. A. Brooks.

THE PROPER SIZE OF SOIL PIPE.

St. Louis, Mo., March 23, 1909.—To the Editor "Domestic Engineering." Sir: Appreciating your commanding position as editor of one of our trade papers in bringing about changes for the advancement of the trade along all lines, and the untiring efforts of yourself and efficient staff of "Domestic Engineering" toward the adoption of anything proven after thorough consideration to be in the interest of better plumbing, I forward some comment by our Mr. Coffey on the article entitled "The Proper Size of Soil Pipe" by Chas. M. McHugh (which refers to another article on the same subject which appeared in the issue of December 12) which appeared in "Domestic Engineering" dated March 20, which you may publish if you see fit.

It may be of interest to you to know that in the regular course of instructions at the St. Louis Trades School, we are advocating the adoption of the 3" soil pipe for many types of installation.

At the time we first saw fit to encourage the use of 3" soil pipe, the departure was looked upon by many as radical. But the growing favor with which the suggestion is meeting encourages us to the belief that our first conclusions, based upon practical experience, experiments and consideration of the mechanics of plumbing design, were correctly drawn.

With our best wishes that the future success of "Domestic Engineering" will be proportional to the usefulness of the journal to the trade, which, if the past may be taken as an index to the future, will be great indeed, we assure you, we are,

Very sincerely yours,

St. Louis Trades School.

M. J. WARD,

In Charge of Faculty.

St. Louis, Mo.—To the Editor of "Domestic Engineering." Sir: In your valued paper of March 20 appeared an article by Chas. McHugh relative to the proper size for soil pipe for an ordinary dwelling and it is with pleasure that we fully concur with Mr. McHugh in his statement to the effect that were all men of the same mind, the plumbing trade would indeed be slow in advancing and discarding the questionable in plumbing practice. Mr. McHugh's article is valuable to the many who are attempting to free the general and common practices in plumbing design of all that is superfluous in that his statements are conscientious and a man of his standing and evident ability should be in position to obtain data which would go far toward deciding questions such as the proper size for soil pipe once for all. Such decisions, of course, must be free from personal or prejudicial bias to be of value.

Perhaps it is due to the ease with which technical knowledge may be acquired that decisions regarding changes, at times radical, in plumbing practice, and along other lines, when once suggested, if based upon merit and sound reason, soon find an extending circle of champions whose broadening field of influence brings about the general adoption of the latest and best in plumbing design as in other fields. The trade paper, in adition to giving men of the ability and training necessary to the broad and logically correct consideration of technical and other questions, concerning the trade, an opportunity of exchanging ideas and conferring with men of like ability, **gives the average man the opportunity of benefiting by the thoughts and labors of men in better position to obtain exact knowledge.** This is only one way of many in which the trade paper is the great factor in the constant advance being made toward **the goal of plumbing craft—a system of plumbing, perfect in design and installation.**

For Years Four Inch the Standard.

The four inch soil pipe, in so far as I have been able to obtain information concerning plumbing as done by the ancients, has been standard since there was a sufficient need for soil stacks to make a standard necessary. Certainly there has been no reduction to four inch in recent years. Martin J. Ward, with whom I have the pleasure of being associated at the St. Louis Trades School, an active and energetic enthusiast after better plumbing, of thirty-five years' experience at the trade, informs me that four inch soil pipe was used altogether when he entered the trade (in those days hand-made and of lead) for stacks on small installations and if there was a general change in

standards to the four inch for this type of installation, it antedates Mr. Ward's connection with or knowledge of the trade.

A man of ability, training, and technical knowledge necessary to the satisfactory and conscientious performance of the duties attendant to a position carrying the arbitrary power of an inspectorship should be the first to grasp the importance of advances made from time to time in plumbing and it goes without saying that he should at all times be amenable to reason.

While the conclusions drawn are all to the evident satisfaction of Mr. McHugh, still the careful investigator will not be satisfied with generalities, but must have specific knowledge in order to arrive at undisputed conclusions and we would enquire further into detail concerning instances which Mr. McHugh was kind enough to cite in his article.

Why Can Smaller Pipe be Used?

Why is it necessary to use the largest cross section of the water closet waste instead of the smallest in determining the proper size for soil pipe? Of course a factor of safety is advisable and the retarding action of the waste outlet might possibly allow a flush to leave the fixture in a peculiar manner, yet it is not the first of the flush which causes the loss of seal in traps, at a lower level through the formation of a partial vacuum, but the last and the latter part of the flush is usually slight due to the cessation of syphonic action.

Is it reasonable to suppose that the meaning of the term "air in the soil pipe being reversed" contemplates the formation of a partial vacuum or is back pressure meant? If the first, we would call attention to the fact that the tendency of water falling through a vertical pipe is to take a rotary direction (an ordinary lavatory waste may be used to illustrate this point) with a hollow cone shaped air space extending downward from the top. In a four inch stack, the greater part of the discharge from a water closet on a higher floor is broken into spray upon entering the stack, the amount of discharge being insufficient to take the course above referred to. This spray, together with the amount of water tending to fall in a mass may as effectively fill the bore of the 4" stack, and no harm would result if the bore of the stack were not filled, as the more solid flow would fill the three inch. "The strong current of air" or partial vacuum is simply a lack of full atmospheric pressure at this point due to the frictional resistance offered by the inside of the stack to the passage of air and the inertia of the air, both of which are slight. The suction or partial vacuum at a given point is formed after the body of the flush has passed the point and is relieved as soon as an atmospheric equilibrium obtains. The velocity of flow of a discharge down a stack is the velocity of a falling body through a like distance less the inertia offered by frictional and air resistance to flow. Careful experiments have determined that under the same pressure air will flow through a pipe at about four times the velocity water will and with these simple elements of natural science at hand, it is theoretically possible to determine the infinitesimal period of time required for sufficient volume of air to effect a total release to reach the point of rarification and if our conclusions are correct, the time would perhaps be the same for either three or four inch.

In suggesting that the waste and vents cannot be made too large, Mr. McHugh loses sight of the fact that if the wastes of our drainage systems are properly flushed, the question of vent efficiency (and the crown vent to an S trap is directly referred to) will be of less importance and the maximum size waste that it seems should be used is one which waste from the fixtures (other than the water closet) will fill when discharged into it.

Improving the Floor Connection.

The beating out of a three inch lead bend to four inches in order to make it large enough to go over a closet spud, suggests the putty joint and its attendant shortcomings. Would it not be entirely practicable to increase the inlet of the lead bend to four inches in diameter (by connecting a piece of four inch lead pipe beaten in at one end and the three inch bend beaten out just enough to receive it without decreasing the internal diameter of the bend at any point) before putting in place?

Importance of Plumbing Inspectors.

The plumbing inspector who is capable and conscientiously fulfills the duties of his office is deserving of a place of no mean importance in the affairs of men. The inspection system is an outgrowth of conditions brought about by unscrupulous and inefficient men plying a vocation closely allied to that of the family physician. As yet the system is in its infancy and evils exist which must be blotted out. The paternalistic attitude of a city or state in making laws governing plumbing installation and inspection gives the building confidence which is in instances unwarranted, for the man of unquestioned ability and responsibility is in a way put on the level with the "wheel-barrow" man and the confidential assertion that "Oh, yes, the plumbing is all right, the inspector passed it," is not always borne out in actual service. Then too, all plumbers are not rascals, nor are all rascals plumbers—inspectorships become political perquisites and offices which should go only to men of integrity and possessed of proper technical knowledge and training become the property of incompetent politicians who further their personal and political aims through mal-practice in an office upon the integrity of which so much depends.

Must Proceed Cautiously.

It is indeed unfortunate that even some of our inspectors take the stand that any changes from the ordinary or routine installation will not be sanctioned before they are fully tried out under all possible and a great many impracticable conditions. Many such conditions exist blocking the way against the inspector's future conviction. Without trying the suggested changes and experiments himself, what would be a practicable way of convincing himself of the prepriety of even a simple change?

If every plumber engaged in the business should take the same stand as our friend, Mr. McHugh, and refuse to accept the ability of three inch soil pipe to give satisfactory services in this class of installation, until it has been used in all places, installations and under

all conditions which it could possibly be installed, then it would be a question as to how long a time it might be thought necessary to expose the piping to these tests, in order to entirely satisfy all that it was even safe to use three inch soil pipe for dwellings and similar installations.

Efficiency the Main Point.

The difference in cost between the systems would extend to the saving in labor consequent to the lighter installation. Another feature which readily recommends the three inch stack is that it may be run in an ordinary five inch partition without furring or having hubs project through the plaster.

Such considerations as convenience, adaptability and cost are secondary to that of efficiency and when men of the unquestioned ability of C. B. Ball, J. J. Cosgrove and others, who are recognized authorities upon such subjects, openly favor and endorse the change from four to three inch soil pipe for a great many installations, pointing to the fact that the four inch stack is a relic of the days when the flush from the water closet was really a four inch stream (in the plunger and pan closet period) and that the more nearly full a pipe flows, the better scouring action may be expected, **is it not time that we who are inclined to differ with these well informed gentlemen, obtain some specific information from which to work, and not depend upon a mass of conditional generalities for support of our theories?** **Coffey.**

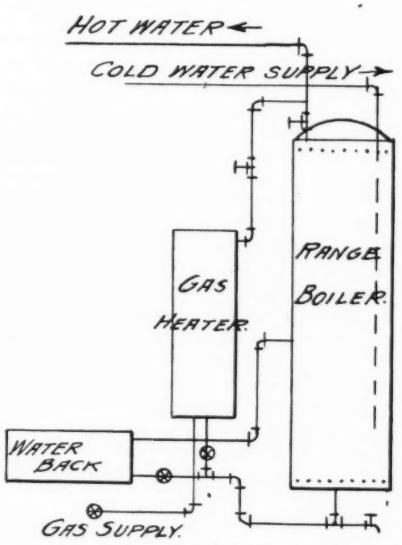
Who's Who in America—XII

J. Oscar Smith, of Moberly, Mo., served his time as a journeyman fitter in the shop of Beggs & Tracy, in Denver, Colo., starting at the trade in 1899. He worked at the bench in Denver in the larger shops for 15 years. Beginning in 1897 he carried on business for two years in a partnership known as Smith & Vandventer. He sold his interest in 1900 and again worked at the bench in various cities throughout the west. He invented a tape reel case and has had it patented and is introducing it with great success. In 1903 he located in Moberly, Mo., a town of 12,000 people, where the Wabash Railway Company employes 1,200 men in their shops. He engaged in the heating contracting business and was perhaps the first fitter to make a specialty of heating only in that city. He has branched out and reached towns within 50 to 100 miles of Moberly with his contracting and has established a good business. He is a Pennsylvanian by birth, is 35 years old, has been married five years and has two daughters. He has with his family incorporated the J. Oscar Smith Co. under which name he is manufacturing his tape line. This little device is a tape line case with a hinged cover opening like a watch. Under this cover is a tray holding 50 sheets of paper. When desired this tray can be readily removed for repairing the case or line or renewing the line. The particular advantage of this case is that it offers a removable paper memorandum sheet, on which measurements may be jotted down as they are taken and afterwards transmitted to estimate sheets.

TWO METHODS OF HEATING HOT WATER SUPPLY.

131.—Dayton, Ohio.—To the Editor of "Domestic Engineering." Sir: Will you please illustrate a method of connecting a gas heater and a water front with a range boiler so that the water may be heated by the coal range when in use or by the gas heater when wanted? **B.**

The illustration shows a method of making this connection. The hot water supply from the gas heater is



Sketch showing how a range boiler can be connected t a gas heater and a water back.

carried directly into the main hot water circulating pipe from the range boiler so that the water instantaneously warmed by the gas heater may pass directly into the circulating system without passing into the range boiler. The warm water supply from the water front is carried to the side connection of the range boiler as is usually done. A valve is placed on the hot water supply from the range boiler, is closed at such times as the range is out of use for long periods. Valves are also placed so that the gas heater may be entirely cut out, and on the cold water supply to the water front. A valve should not be placed upon the flow pipe from the hot water front as in that case both valves might be closed and there being no possible expansion for the water contained in the water front, it would, if heated, burst the water front.

NATIONAL LEAD CO. MAKES ANNUAL REPORT

Showing net earnings of nearly Three Million Dollars for 1908, only two per cent less than for 1907.

Coast Authority Writes Interestingly on Trade Conditions in the Northwest

NATIONAL LEAD CO. MAKES GOOD SHOWING.

The National Lead Company held its own well during the period of depression, the business of 1908 being only 2 per cent below that of 1907, which was the largest in the company's history. The annual report for the fiscal year ended December 31, 1908, submitted to the company's stockholders at the annual meeting on Monday, April 5, shows net earnings of $2,902,753, a decrease of only $39,492. Dividends amounting to $1,705,732 on the preferred stock and $1,032,770 on the common stock were paid and a surplus of $164,251 carried forward, making the total profit and loss surplus $4,458,455.

In his report to the stockholders, L. A. Cole, president of the company, says that all repairs have been charged to current expenses, and that the finances of the company are in good condition. The various properties acquired from time to time have contributed to the prosperous condition of the company. Business for the current year, he says, exceeds that of 1908, as was to be expected. He does not look for heavy trade until the tariff question is out of the way.

The report says competition is increasing, but the company's position will be maintained by such conservative activity as may be necessary to hold trade. New articles are added to the list of those made by the company when it is found profitable to do so. The mining and smelting department has a plant in process of erection for the manufacture of sublimed lead, a product which has a variety of uses.

CONDITIONS IN THE NORTHWEST.

A recent trip of inspection covering Portland, Seattle, Spokane, Butte, Salt Lake City, Helena, Missoula, Wallace and Tacoma, made by a well known authority on coast matters, discloses business in a very inactive condition, and not as good the latter part of March as the month previous. Nearly all dealers feel upset and uncertain of the market owing to the break in steel, but all seem to feel that when spring opened up business would improve. What the results for the year will be is difficult to foretell, but it is believed that there will be quite an improvement later on. There is a nervous feeling about copper, the result being that brass goods are very slow and no orders are being placed. At the present time **Spokane seems to be in the healthiest condition** of all the cities in the Northwestern territory. It is bound to become quite an inland center with its varied resources of agriculture, mining and lumber, as well as its manufacturing facilities possible in the Spokane Falls' water power immediately in the heart of the city. It has a population of 125,000 and is growing rapidly; in fact, the whole Northwest is growing. **Seattle looks, and is, quite progressive** and **Portland surely has taken new life** and is making a fine showing with her new and high grade buildings. **The Alaska-Yukon Exposition,** to be held in Seattle from June 1 to October 15, promises to be very attractive and the attention of our trade is particularly called to this interesting event, and to the fact that this period of the year is a delightful time to visit that section of the country. The climate of Seattle during the summer is superb and the location of the exposition grounds is unsurpassed. The exposition will be well worth seeing and its authorities state that it will be the first and only fair of its kind to be complete in all its details on the opening day. The exposition will be on the grounds of the University of Washington and through very wise forethought several of the buildings have been made permanent and are to be turned over to and used by the university after the exposition closes.

OPENS PLUMBING SPECIALTY BUSINESS.

Frank M. Crookston has opened an office at 217 West 125th street, New York City, where he will conduct a manufacturing and jobbing business in plumbing specialties.

MOVES INTO NEW QUARTERS.

N. O. Nelson Mfg. Company, of St. Louis, Mo., announces that its San Francisco branch is now located in new and commodious quarters at 978-982 Howard street, San Francisco.

MAY HOLD JOINT MEETING AT ATLANTIC CITY.

It is quite probable that the next joint meeting of the Eastern Supply Association and Central Supply Association will be held in Atlantic City, N. J., on June 14 and 15.

BRASS FOUNDRY VISITED BY FIRE.

The Cheshire Brass Company, of Cheshire, Conn., was visited by a fire last week, which damaged the plant to the extent of $15,000.

TO BUILD NEW ADDITIONS.

The Mt. Holly Iron Works Company, of Mt. Holly, N. J., has had plans made for the erection of a new foundry to manufacture small castings and plumbers' specialties. Grover C. Johnson is secretary and treasurer of the company.

The Charlotte Pipe and Foundry Company, of Charlotte, N. C., is erecting a new addition to its plant there. The structure, which will be of solid brick construction, will be used as a fitting warehouse. It is enlarging quite extensively its system of individual tracks —a task which will be the more easily accomplished in view of the fact that the company has recently purchased forty-five acres of land along the Southern Railroad tracks.

NEW ARRIVAL IN THE PLUMBING SPECIALTY LINE.

The National Hygienic Manufacturing Company, 1302 Main street, Columbia, S. C., has begun the manufacture of plumbing specialties. L. B. Dozier is president of the company.

INCREASES ITS CAPITAL STOCK.

The Range Boiler Insulator Manufacturing Company, of Portland, Ore., has increased the capital stock of the concern to $50,000.

MAKING ARRANGEMENTS FOR BASEBALL SEASON.

Another meeting of the Plumbing and Steam Fitting Supply Baseball League of New York was held on Saturday afternoon, April 3, in the offices of the Fairbanks Company, Lafayette and Broome streets, at which it was decided to use the Taylor ball throughout the season. Many other questions of more or less importance came before the meeting and were passed upon. Diamonds will be selected, among several already offered, at the next meeting, which will be held today (April 10) at John Simmons Company's offices, 110 Centre street. The official schedule announced this week is published herewith. The season opens Saturday, May 15, the first game being between American Radiator Company and Cornell & Underhill.

SCHEDULE OF THE PLUMBING AND STEAM FITTING SUPPLY BASEBALL LEAGUE.

	American Radiator Co.	Cornell & Underhill.	Crane Company.	The Fairbanks Company.	Johns-Manville Company.	Ronalds & Johnson Company.	Sargent & Company.	John Simmons Company
American Radiator Co.....		May 15. July 3.	May 22. July 10.	May 29. July 17.	June 5. July 24.	June 12. July 31.	June 19. Aug. 7.	June 26. Aug. 14.
Cornell & Underhill.....	May 15. July 3.		May 29. July 17.	May 22. July 10.	June 12. July 31.	June 5. July 24.	June 26. Aug. 14.	June 19. Aug. 7.
Crane Company.....	May 22. July 10.	May 29. July 17.		May 15. July 3.	June 26. Aug. 14.	June 19. Aug. 7.	June 5. July 24.	June 12. July 31.
The Fairbanks Co.....	May 29. July 17.	May 22. July 10.	May 15. July 3.		June 19. Aug. 7.	June 26. Aug. 14.	June 12. July 31.	June 5. July 24.
H. W. Johns Manville Co..	June 5. July 24.	June 12. July 31.	June 26. Aug. 14.	June 19. Aug. 7.		May 15. July 3.	May 22. July 10.	May 29. July 17.
Ronalds & Johnson Co....	June 12. July 31.	June 5. July 24.	June 19. Aug. 7.	June 26. Aug. 14.	May 15. July 3.		May 29. July 17.	May 22. July 10.
Sargent & Company.....	June 19. Aug. 7.	June 26. Aug. 14.	June 5. July 24.	June 12. July 31.	May 22. July 10.	May 29. July 17.		May 15. July 3.
John Simmons Co.....	June 26. Aug. 14.	June 19. Aug. 7.	June 12. July 31.	June 5. July 24.	May 29. July 17.	May 22. July 10.	May 15. July 3.	

PLUMBING SPECIALTY OFFICE MOVED.

Star Expansion Bolt Company has moved its general offices from Bayonne, N. J., to its executive offices at 147 Cedar street, New York City.

Alexander Felz, manufacturer of plumbing specialties, has moved his office from 260 West 125th street to 217 West 125th street, New York City.

TO MANUFACTURE INSTANTANEOUS WATER HEATERS.

The Akron Automatic Hot Water Heating Company, of Akron, O., has been incorporated under the laws of Ohio by Charles A. Ley, James W. Meeker, W. W. McIntosh, Lester A. Teits and J. L. Reed, all of this city. The capital stock of the new concern is nominally placed at $10,000, which will probably be increased in the near future. The concern will later on engage in the manufacture of automatic and instantaneous water heaters. For the present, however, they will be manufactured by another plant, until the concern is able to secure a plant of its own.

ENLARGE FACTORY AND ADD NEW LINES.

The United States Gauge Company, with executive and sales offices at 67 Wall street, New York, has recently completed two new additions to its factory at Sellersville, Pa., one 150x50 feet, and the other 60x40 feet, one story high. The new buildings will enable the company to combine its foundry and finishing departments instead of having them scattered as formerly. It has added to its line of gauges a line of hot water thermometers, high and low pressure electric alarm gauges, pop safety valves and steam whistles.

NOTABLE CONSOLIDATION BEING ARRANGED.

A deal has been practically completed for the affiliation of the Beaton & Bradley Company, of New Britain, Conn., the Beaton & Corbin Company, of Southington, Conn., and the Andrew H. Magee Company, of 105 Beekman street, New York.

IMPORTANT REPORT ON MACHINE TOOLS IN EUROPE.

"**The Machine Tool Trade** of Germany, France, Switzerland, Italy and the United Kingdom" is the title of a 246-page report by Captain Godfrey L. Carden, special agent of the Department of Labor, who spent nine months of the year 1908 in a personal inspection of leading machine tool factories and establishments in which such tools are made and used, and in making a study of industrial conditions affecting the foreign trade in machine tools. The report is very thorough and

exceedingly valuable. Manufacturers and others interested in the machine tool trade can obtain copies on application to the Bureau of Manufactures, Department of Commerce and Labor, Washington, D. C.

SPECIAL RAILROAD RATES FOR JOINT CONVENTIONS.

For the joint convention of the Southern Supply & Machinery Dealers' Association and American Supply & Machinery Manufacturers' Association, to be held in Chattanooga, Tenn., May 5-6-7, the Southeastern Passenger Association, whose lines operate in the territory south of the Ohio and Potomac Rivers and east of the Mississippi River, has granted a rate of one and one-half fares plus 50 cents for round trip under the certificate plan, and the Trunk Line Association, embracing territory north of the Ohio and Potomac Rivers and east of Buffalo and Pittsburgh, but not including New England, has granted a rate of one and three-fifths fares plus 25 cents for round trip under the certificate plan. **For the joint convention of the National Supply & Machinery Dealers' Association and American Supply & Machinery Manufacturers' Association,** to be held in Pittsburgh, Pa., May 12-13-14, the New England Passenger Association has granted a rate of one and three-fifth fares plus 25 cents on the certificate plan for points in Trunk Line territory outside of Pennsylvania, and two cents per mile in each direction on round trip tickets from points in Pennsylvania east of Pittsburgh.

PUBLIC COMFORT STATIONS FOR BERLIN, ONT.

Berlin, Ont.—A public comfort station is to be built by the Berlin Parks Commission and G. M. Debus, secretary of the commission, is interested in all information on the subject.

FOR PUBLIC COMPORT STATIONS AT YOUNGSTOWN.

Youngstown, O.—A movement has been started for the erection of public comfort stations in this city. The Merchants' Association and the Humane Society are interested in the movement, and C. L. Wilkins is at the head of a committee which is making preliminary investigations.

PUBLIC BATHS FOR MINNEAPOLIS.

Minneapolis, Minn.—Known as the "father of the public bath system of Boston," Mr. Arthur A. Woods, on his recent visit to this city, gave the movement for municipal baths a healthy impetus. Mr. Woods, in an address before prominent persons of Minneapolis, enthusiastically advocated the establishment of public baths. "In Boston," said he, "we have found that it is a positive saving to other departments of the civic administration to have public baths. The health department, the hospitals and even the police department have received unquestioned aid from this source, and have been enabled to reduce their expenses since the founding of the public baths. The cost of the baths is more than made up by their influence on the public body."

METAL MARKET STILL REMAINS VERY DULL

Though Iron and Steel Show some Improvement

New York Metal Market, April 6.

Copper, Prime, Lake	$ 13.00
Copper, Lake, Arsenical brands	12.75
Copper, Electrolytic	12.65-12.75
Antimony, Cookson's	7.85- 7.95
Lead	4.10
Straits Tin	29.50
Spelter	4.82

Chicago Iron Market, April 8.

Southern, No. 2, Foundry	$15.35-15.85
Northern, No. 2, Foundry	16.50-17.00
Lake Superior Charcoal	19.50-20.00

April 8, 1909:

Foundry iron was 50c lower than the week previous
$1.00 less per ton than the year previous
Copper was the same price as the month previous
⅛c per lb. less than the year previous

COPPER MARKET REMAINS DULL.

New York, N. Y.—There are unconfirmed reports that Europe bought quite heavily in the copper market early this week at a trifle higher than 12¾ for June electrolytic, and it is also said that domestic wire makers also took on a fair quantity for the same delivery at about the same price, says the "American Metal Market." General business, however, is anything but active and dealers say they are going day after day without having as much inquiry as they would ordinarily get in the dull mid-summer period.

SIX CENT COPPER PREDICTED.

H. T. Bratnober, who discovered in Alaska in 1905 what he believes to be the world's greatest copper district, says in an interview in Tacoma, Wash., that within two years Alaska copper will be produced at six cents a pound by the J. P. Morgan and Guggenheim Syndicate. It is understood that Montana, Arizona and Lake Superior copper costs from nine to ten cents a pound to produce. The consumers of copper will be interested in this prognostication.

STEEL BUSINESS IMPROVING.

There has been reported a steady gain in the iron and steel business, even in the face of the fact that many consumers believe that prices will still get lower. The fact that prices have been reduced to a point where independent concerns will not meet competitive quotations indicates that prices need not be expected to get much lower, and when consumers become satisfied with this fact the steel business will expand more rapidly than it has done since 1907. With a little encouragement, which will come when the price situation is believed to be at its bottom, the steel trade will show a very vigorous condition.

LARGE INDEPENDENT STEEL COMPANY BELIEVES IN THE FUTURE.

Pittsburg, Pa.—No better example of the faith business men of the Pittsburg district have in the future could be found than that shown by the Jones & Laughlin Steel Company. This company, the largest of the independent concerns, is planning extensive improvements to cost many millions of dollars. That the financial world has the utmost confidence in the ability of the company to make money is evidenced by the fact that the $15,000,000 5 per cent 30-year bonds sold to Blair & Company and the First Trust & Savings Bank, of Chicago, have all been disposed of by these institutions. These bonds are part of an authorized issue of $30,000,000.

BIG INVESTMENT IN MEXICAN IRON.

Mexico City, Mex.—Fifty million dollars will be invested here and in different parts of the country by French and English capitalists in iron and steel works. Victor Belanger, of Paris and Boston, and Thomas A. Boyd, of the firm of J. & T. Boyd, owners of the Sheetleston Iron Works, of Glasgow, are said to be behind the deal, which will be put into effect the current year.

Personal

D. T. Kenney has resigned from the presidency of the Kenney Manufacturing Company, of New York.

James T. Wasson, a master plumber of Schenectady, N. Y., and wife are at present on a trip through Florida.

Robert L. Hanschke, for many years connected with the Hoffman & Billings Mfg. Company, of Milwaukee, has joined the force of Weil Bros., of Chicago.

R. E. Crane, of the Eljer Company, Cameron, W. Va., has been making a trip to the coast states and seems to have made a hit with his new tank. We are advised that all of the leading jobbers have taken hold of it and think it is a good one.

George B. Wiggins, who has been representing the Monarch Brass Company in Brooklyn, N. Y., and New Jersey territory, has resigned his position with that company to accept a position as salesman with the New Orleans branch of the Fairbanks Company.

Fred C. Kuetemeyer, a well known plumbing contractor, of Milwaukee, Wis., is one of the organizers of the Wisconsin Motor Manufacturing Company, which will build automobile motors at North Milwaukee. The capital stock is $50,000, and Charles H. John and Edward Schwartzburg are associated with Mr. Kuetemeyer in the enterprise. Five hundred motors will be built annually.

The plumbing trade in the Southern states will be interested to know that James Malone, who is well remembered through his past association with the Lewis Lipp Company, of Cincinnati, Ohio, has accepted a position with the plumbing specialty firm of M. Glauber & Company, of New York City. He will cover, in the interests of that concern, the states of Kentucky, Tennessee, Mississippi and Alabama, together with the cities of New Orleans, La., and Pensacola, Fla. Mr. Malone is well known among the trade he will visit and he carries with him in his new work the good wishes of a host of friends.

DEATH CALLS TWO PIONEERS IN THE PLUMBING TRADE

Thomas Gibson, of Cincinnati, and Justin Parmelee, of Chicago, Pass On.

Thomas Gibson, the pioneer master plumber, of Cincinnati, O., whose death was recorded in this column last week, was born near Edinburgh, Scotland, July 9, 1823, and was brought to this country in 1831 by his parents, who settled in Cincinnati. They had been preceded by a brother of his father, Peter Gibson, who was in the plumbing business. Thomas Gibson remained in Cincinnati and was the city's second plumber's apprentice, the first one being his cousin, Thomas B. Gibson. Both were taught the business by their uncle. The establishment of the Thomas Gibson Company dates back to 1832, when Peter Gibson opened a little plumbing shop on Walnut strtet, the first of its kind in all the regions west of the Alleghenies. The original single entry account book of this primitive little plumbing shop is among the keepsakes of the Thomas Gibson Company. In 1840 Thomas Gibson was taken into partnership by his uncle. Afterward it became known as the J. B. & T. Gibson Company, and in 1872 the present company was founded and the incorporation took place in 1883, when he was elected its president and treasurer, in which capacities he served until the time of his death. When he first entered the trade all plumbers made all the lead pipe and cast all the sheet lead needed in their business. At that time staple plumbing fixtures consisted of hydrants, long copper chamber pumps and wooden bath tubs. Mr. Gibson is said to have fitted up the first pan closet flushed from a service box, and the iron trunk and the four-inch lead trap can still be seen in good condition in his company's establishment. He took the lead in the installation of plumbing fixtures, usually seeing that Cincinnati's buildings were supplied with the latest inventions. He was thus the first in his city to install earthenware closets imported from England and he later brought out the Thomas Gibson closet, which was sold extensively by jobbers some twenty-five years ago. He was the oldest member of the Caledonian Society, of which he had been president, and it was his custom to attend its annual banquets. He sat about the festal board on 40 consecutive occasions, making his last appearance two years ago, when he was given a rousing reception.

Justin Parmelee, president of the Parmelee Wrench Company, passed on at his residence, 1056 West Monroe street, Chicago, on Sunday, April 4, in his 75th year. Mr. Parmelee was formerly superintendent at one of the factories of the L. Wolff Mfg. Company in Chicago, a position from which he resigned several years ago owing to his advanced age. He is survived by a son and a daughter, his son, Roy Parmelee, being general manager of the Parmelee Wrench Company.

JOURNEYMAN PLUMBERS ON STRIKE IN BUFFALO

Chicago Journeyman Steamfitters' Strike ended. Both Masters and Journeymen Yield

Texas Court Decides that Plumbers are Responsible for Poor Work and may be held Liable for Damages

BUFFALO PLUMBERS ON A STRIKE.

Buffalo, N. Y.—Two hundred and fifty journeymen plumbers in this city went on a strike on Thursday, April 1, for an increase in wages and for new shop rules. The increase asked for is 50 cents a day, making their pay $4 for eight hours' work; double pay for Saturday night work and for work on Saturday afternoons during June, July and August; that their pay be ready within 15 minutes after quitting time; that the number of apprentices and helpers be restricted to one to each establishment; that all iron pipe two inches and under shall be cut, threaded or placed in position only by journeymen; that no journeyman shall be held responsible for breakages or complaints if said journeyman has notified the owner or tenant of same; that no journeyman shall be allowed to finish or install any work that has been started by an employer; and several other regulations.

STEAMFITTERS' STRIKE AT AN END.

Chicago, Ill.—The steamfitters' strike, which has been in progress since April 1, has been called off and the men will return to work as soon as a settlement is made with their helpers. By the terms of the agreement the men will receive $5.20 a day from now until July 1, and $5.50 a day thereafter. The union men waived their demand to go on sympathetic strikes to assist other trades and also the clause which prohibits workmen leaving their employment because non-union men in some other craft may be at work on the building. This agreement is to remain in force for two years.

COURT HOLDS PLUMBERS RESPONSIBLE FOR POOR WORK

San Antonio, Tex.—Chief Justice J. H. James, of the Fourth Court of Civil Appeals, recently handed down the opinion that plumbers are responsible for their work and may be held liable for damages resulting from work improperly done. The ruling was made in the case of Burnett & Barnes vs. J. C. Dillon, from Harris county. Burnett & Barnes were sued in the lower court for damages to Dillon's stock of cigars and tobacco as a result of improper repairs to a water faucet.

CHICAGO DRAIN LAYERS MAY STRIKE.

Chicago, Ill.—The drain layers and helpers threaten to strike for an increase in wages. A conference between a committee of the union and committees of the Master Plumbers' and Master Sewer Builders' Associations was held last Wednesday without result. The employers refused to grant an advance. The journeymen drain layers demand a raise from $3.75 to $4.50 a day and the helpers ask for an advance from $2.85 to $3.50. There are 1,000 helpers and 500 journeymen in the union. A special meeting of the employers will be held within a few days to consider the situation. The outcome of the dispute will depend on the result of the wage scale negotiations between the contractors and the building laborers. The latter demand an increase from $2.80 to $3 a day.

DELEGATES TO DETROIT CONVENTION SHOULD SECURE HOTEL ACCOMMODATIONS NOW.

Detroit, Mich.—The hotelkeepers of this city desire to impress upon the **delegates to the convention of the National Association of Master Plumbers,** to be held here June 22-24, the **necessity of ordering their hotel accommodations as far in advance as possible** and at once if convenient, because this city's hotels will be crowded places on those days owing to the fact that a national medical association also will meet here at the same time. For the benefit of those who are not familiar with the hotels in Detroit we take pleasure in giving the following list of up-to-date hostelries. Hotel Tuller, Pontchartrain, Cadillac, St. Clair, Griswold, Wayne, Normandie, Metropole and Oriental.

CHANGE DATE FOR COLORADO CONVENTION.

Pueblo, Colo.—The date of the twelfth annual convention of the Colorado Master Plumbers' Association has been changed from Thursday, April 22, to Wedn. April 21, on account of the fact that a better place of meeting could be secured for the latter date.

N. Y. STATE COMMITTEES ANNOUNCED.

New York, N. Y.—President I. J. Brown, of the New York State Association of Master Plumbers, has appointed the following committees:

Legislative Committee: Chairman, Timothy E. Kerwin, Howard street, Albany, N. Y.; B. Fanning, Newark, N. Y.; George Cropper, Binghamton, N. Y.; Louis Friday, Schenectady, N. Y.; James P. Knight, New York City.

Sanitary Committee: Chairman, James L. Meeks, 5118 Fifth avenue, Brooklyn, New York City; Peter Schweickert, Bronx, New York City; Charles A. Kienzle, Syracuse, N. Y.; T. M. Hennessey, Oswego, N. Y.; L. F. Bannon, Kingston, N. Y.

Apprenticeship Committee: Chairman, Frank J. Fee, 415 West 40th street, New York City; F. B. Robertson, Bayside, New York City; Jos. F. Carr, New Rochelle, N. Y.; M. J. Murray, Jamestown, N. Y.; A. J. Bannigan, Utica, N. Y.

Transportation Committee: Chairman, C. B. Huck, 820 Main street, Buffalo, N. Y.; Louis J. Yanchzi,

Rochester, N. Y.; Edwin Pidgeon, Northport, L. I.; P. C. Doherty, Poughkeepsie, N. Y.; John D. Sminton, Jr., Port Jervis, N. Y.

TEXAS PLUMBERS WILL MEET AT DALLAS.

Dallas, Tex.—The Associated Master Plumbers of Texas will hold their annual convention in this city on Monday, Tuesday and Wednesday, April 26, 27 and 28, according to call issued this week by President Joseph Netzer, of Laredo, Texas. The opening session will be held on Monday morning at 10 o'clock.

NEW JERSEY PLUMBERS TO MEET IN MAY.

Jersey City, N. J.—The eighth annual convention of the New Jersey State Association of Master Plumbers will take place at the Columbian Club building, corner of Jersey avenue and Bright street in this city, on Wednesday, May 12, according to announcement issued under date of April 5 by President Edson Garrabrant and Secretary H. F. Baillet. The convention will be called to order at ten o'clock in the morning, and as it has been decided to transact all the business of the convention in one day, it is very desirable that all delegates should appear at the convention hall on time.

COMMENCEMENT EXERCISES OF THE NEW YORK TRADE SCHOOL.

New York, N. Y.—The twenty-eighth annual commencement exercises of the New York Trade School were held in the assembly hall of the institution at First avenue and Sixty-seventh street, on Wednesday evening, March 31. The room was filled to overcrowding with relatives and friends of the students, so that even standing room was at a premium. The hall was tastefully decorated with the national colors and a good orchestra was in attendance.

President R. Fulton Cutting opened the exercises with some good advice for the graduates, telling them to start out and endeavor to gain a reputation and make themselves a benefit to their community rather than try to get rich quick.

Prof. James C. Monaghan, principal of the Stuyvesant Evening Trade School and secretary of the National Society for the Promotion of Industrial Education, delivered the commencement address, with some strong and forceful words and sent the boys forth into the world with an abundance of advice and encouragement. The subject of his address was, "America, a Land of Unlimited Opportunities." In closing he defined the flag, saying the red of which is a symbol of the blood shed to make this country what it is, the white for the high ideals of our people, the blue for the boundless hope which the country affords and the stars for steadfastness of purpose. He told the boys to bear this in mind and success is bound to reward them.

Among the guests of honor and members of the school committees present were: President R. Fulton Cutting and Miss Cutting, F. Augustus Schermerhorn, treasurer, and Mrs. Schermerhorn, Francis C. Huntington, trustee, and Mrs. Huntington, and Mr. and Mrs. J. Roosevelt and Edward Murphy, Frank Reynolds, Thomas J. Toumey, Thomas Kelly, W. H. Dewar, George Cressy, William Young and E. J. Brady, of the Master Plumbers' Association, and Arthur A. Hammerschlag, of the Carnegie Technical Schools of Pittsburgh.

The presentation of honor rolls and medals and the singing of "America" closed the exercises. The gold medal of the Master Plumbers' Association was presented to George H. Mollenkopf, of Rensselaer, N. Y., by Frank Reynolds. H. V. Brill, superintendent of the school, presented the medal of the Master Steam Fitters' Association to Morgan Evans, of Pittston, Pa. His percentage was 96.16. Arthur Hammerschlag, a former instructor in the school, presented the honor rolls, while the certificates of graduation were given to the students by John H. McCullagh and Louis Rouillion, of the General Society of Mechanics and Tradesmen of New York City.

TO ESTABLISH SCHOOL OF SANITARY ENGINEERING.

New York, N. Y.—Columbia University is about to form a department which will be known as the **School of Sanitary Engineering.** The American people are beginning to realize the extent to which the health is dependent upon proper sanitation and there will be room in the country for many graduates of this department of the college before many years.

Rochelle, Ill.—A. M. Pentz has purchased the plumbing and steam heating business heretofore conducted by Beebe & Halsey.

Plumbing Inspection

ILLINOIS STATE BOARD OF PLUMBING EXAMINERS.

Peoria, Ill.—E. H. Donahoe, president of the Board of Examiners of Plumbers of Illinois, has prepared articles to govern that organization. There are twenty Boards of Examiners of Plumbers in the state of Illinois, and since Mr. Donahoe's election as president, four years since, he has assisted in organizing nine boards of examiners in the state of Illinois, and stands ready at any time to visit any city to help organize a board, provided his expenses will be paid.

WANTS PRACTICAL PLUMBER ON STATE BOARD OF HEALTH.

Minneapolis, Minn.—By appointment of the city council **E. F. Sahler,** representative from the 38th legislative district in Minnesota and member of the firm of Sahler & Maurud, plumbing and heating company, 313 Washington avenue, North, has just been made a member of the Board of Examination of journeyman plumbers. Mr. Sahler has been engaged in the trade since 1883, and since 1893 has been in the business independently in this city. He is now associated with C. J. Maurud and with him is conducting one of the most complete establishments for the installation of heating plants and high-class plumbing in the Northwest. In the state Legislature, Mr. Sahler is one of the leading spirits along the lines of public buildings and their control, and is prime mover in an endeavor to place a practical plumber on the state board of health. This work in particular is occupying the largest share

of his attention at present, and he is bending every effort, in the interests of health and of proper sanitation, to have this measure placed on the statute books. In placing a scientific and practical plumber on the board of health, it is thought the work of the board will be at once lightened, and at the same time increased in efficiency. In past years it has been necessary for the board of health to take up matters of drainage, disinfection and proper sanitation without previous experience along these lines, and members were therefore liable to make mistakes. Aside from this work, Mr. Sahler is a member of the state board of control, the grain and warehouse committee, the committee on prison labor, public buildings and on sleeping car and private car lines. Judging from the success which this prominent plumber has achieved in this, his first term in the state legislature, it would appear that he is due for many other terms, and perhaps for further promotion along the lines of work to which he is bending his energies in the service of his constituents. Those who have sent him to the halls of legislation are pleased with his work and expect it to go on unhampered, until a successful culmination is reached.

E. F. Sahler of Minneapolis, Minn., a master plumber who believes in discharging his debt to the public and is a member of the legislature and of the Board of Examiners of Journeymen Plumbers.

Davenport, Iowa.—Otto Meinert, Chief of Plumbing Inspectors in this city, will be glad to send plumbing inspectors and others interested in plumbing legislation a copy of the new plumbing code of this city, which recently went into force, and which is considered a model code for a city of Davenport's size.

FIFTY-EIGHT TOLEDO PLUMBERS ARE DISCHARGED

Charges of maintaining a "trust" and of conspiracy to restrain trade dismissed

After two years' time consumed by an insincere prosecution 58 plumbers are finally discharged

JUSTICE FINALLY COMES, BUT ON A SLOW TRAIN.

Toledo, Ohio, April 6.—When Common Pleas Judge Charles E. Chittenden, from the criminal bench, announced on March 31 his decision sustaining the motion to **discharge the 58 master plumbers** of the city, he brought an unceremonious close to one of the most picturesque legal fiascoes ever perpetrated in this section of the country.

These cases have been of particular interest to plumbers all over the country, not only because of the peculiar features presented, but **because of the sweeping charges** made and the dilatory tactics pursued by those having charge of the prosecution.

In April, 1907, an ambitious prosecuting attorney started out to make a reputation for himself as a "trust-buster." As a consequence a thoughtless grand jury was induced to present indictments against more than a hundred of the leading business men of this city, charging them with forming and maintaining illegal combinations in restraint of trade, in violation of the Valentine anti-trust laws of Ohio.

Included in the list of victims caught in the drag-net were twenty-five lumber dealers, nine brick men, several bridge concerns and **sixty-two master plumbers,** comprising nearly every master plumber in the city, and indeed some who were not in the city, for so recklessly was their work done that it was discovered that there was included among the list of those facing the criminal charges the names of two who had months before moved without the jurisdiction of the court, one who had a long time previous been committed to an insane asylum, and one who had passed beyond the reach of earthly courts, thus leaving a total of fifty-eight plumbers to face the music.

Then began a display of legal pyrotechnics such as was never witnessed in the local courts. The lumber men, the brick men and the bridge men, after a brief display of defiance, acting upon the advice of their attorneys, entered pleas of guilty, and were sentenced to pay heavy fines, with six months' imprisonment attached for good measure in the cases of the lumber dealers and bridge men. After a long siege of litiga-

tion in the higher courts, and the establishment of an unheard of precedent, that of the presentation to the court of a petition bearing the signatures of more than 10,000 leading citizens of Toledo, the imprisonment feature was abandoned and the fines paid.

The 58 plumbers from the first denied their guilt and called upon the state to prove the charges made. They declared that **no combination existed,** or had existed for years; that **not even a similarity of prices was being maintained,** that **no agreement of any kind was in vogue,** that **all plumbing business** in the city of Toledo **was being conducted upon a fairly competitive basis,** and that they would be satisfied with nothing less than **a complete vindication** at the hands of a jury.

Eminent legal counsel was retained and every one of the accused men entered his plea of "Not guilty" to all three of the indictments presented. For nearly two years, at every session of the criminal court, these plumbers have appeared and through their counsel requested, urged, and even demanded that their cases be brought to trial, and that they be given the opportunity of removing the stigma with which they had been besmirched. Every effort along this line proved fruitless, and as the matter of fixing the time for hearing rested in the hands of the prosecuting attorney, the cases dragged through term after term, until they would have become stale and commonplace had they been of the ordinary variety. **But public sentiment continued to grow and finally became irresistible.** So strong became the pressure that Prosecutor Wachenheimer, last fall, being a candidate for re-election, in a fit of desperation threw down the bars, and in a published interview **put the whole matter up to the voters for approval or repudiation of his policy in the plumbers' cases.** From that moment the result was a foregone conclusion, and after one of the hottest political campaigns ever known in the city, in which the "trust prosecutions" formed the paramount issue, **Wachenheimer was defeated by an overwhelming vote.**

At the subsequent term of the criminal court the cases were again continued, and were finally turned over to Holland Webster for final disposition. Although the general opinion was that these prosecutions would never be brought to trial, **the Toledo plumbers still insisted that they be given the opportunity of vindication at the hands of a jury,** and it was not until several months had passed under the new administration, and there was no apparent prospect that they would ever be able to accomplish this desire, that the final motion was presented to Judge Chittenden, which resulted in the disposition of the cases.

Even then **nine of the defendants refused to join** in the motion and harbored a faint hope that some time in the future they would be able to secure a hearing upon the merits of their cases. These, however, were forced to share the fate of their associates when Judge Chittenden, after sustaining the motion, upon the request of the Prosecuting Attorney, **nolled the indictments against them.** The defendants were discharged for want of prosecution, the laws of Ohio entitling them to this relief when three terms of the criminal court had passed without bringing the cases to trial.

Following are the **names of the Toledo plumbers and supply dealers** who, **after two years of waiting, were last week discharged by the court because of failure to prosecute:**

Alfred E. Baur, Albert C. Bersticker, Christopher G. Bersticker, William J. Bitter, Adam W. Boes, Walter H. Bolley, John A. Brooks, Jacob Cook, John L. Davis, Robert S. Dawson, James D. Densmore, Henry J. Duffy, George E. Enteman, William H. Forrest, August Friedrichs, Jr., Geo. J. Gilsdorf, William E. Girkins, Thomas J. Graham, Frank G. Harlan, Daniel J. Hayden, Fayette T. Jones, Herman H. Kiel, Henry Keller, Frank J. Kern, Thomas Kewley, Jabez W. King, Henry A. Knierem, George M. Kring, John F. Krondorff, Augustus Locke, Allen McLennan, David C. Marker, Gustav Musbach, Martin E. Myers, John N. Pfeiffer, John A. Pressler, Robert Raitz, Charles F. Rausch, James F. Ryan, William Sanzenbacher, John J. Shelling, John H. Scheurman, John E. Shultz, John Tuting, John E. Sweatmen, Harry C. Teal, Frank Collins and the National Supply Company.

B. M. Baker.

PHILADELPHIA SHOWS IMMENSE IMPROVEMENT IN BUILDING ACTIVITIES.

Philadelphia, Pa.—The monthly statement of the Bureau of Building Inspection, issued March 31, shows that the total amount of operations in the past month exceeded those of March, 1908, by fully 90 per cent and also exceeded those of March, 1907, which was a banner year. One of the most notable buildings now being planned is on the hands of a concern to be known as the Chestnut Street Realty Company, which contemplates the erection of an 18-story office building on the site of the six properties owned by the Girard Trust Company on Chestnut street. The incorporators are Effingham B. Morris, president; Albert A. Jackson, vice-president; and Isaac H. Clothier, director of the Girard Trust Company; W. Barklie Henry, of the brokerage firm of Henry & West; John Hampton Barnes and Harry S. Black and William H. Chesebrough, of New York. The skyscraper will be 105x100 feet. Its cost will be about $2,000,000, and the building will be one of the largest in the vicinity of the City Hall. Work was started on April 4 on an operation of two-story dwellings for Daniel J. Munday by Peter Huhn, on the west side of Ambrose street. He will build eight two-story houses which will cost $1,500 each. Five three-story stores and dwellings will be erected on Kensington avenue for David McKibbon, of 2900 Frankford avenue, by John W. Richards. Each house will cost $3,000. The H. B. Deal Company and Edward Fay & Son have posted plans for a six-story factory at Frankford avenue and Westmoreland street for Thomas Wolstenholme & Son. The H. B. Deal Company is also figuring on a warehouse at Third and Vine streets for England & Walton. The warehouse in course of construction at 1926 to 1932 Arch street will cost $35,000.

Perry E. Hitner.

CONVENTION DATES.

April 21, 1909.—Twelfth annual convention of **Colorado Master Plumbers' Association** (including Colorado, New Mexico, Utah and Wyoming) at Pueblo, Colo.

April 15, 1909.—Annual convention of the **Northwestern Master Plumbers' Association** at Cambridge Springs Pa.

BAD PLUMBING LEGISLATION SIDETRACKED IN WISCONSIN

California State Plumbing Bill Still in Governor's Hands Awaiting His Signature

OBJECTIONABLE PLUMBING BILL POSTPONED INDEFINITELY.

Madison, Wis.—The Wisconsin Legislature has killed the Gaylord bill, one of the most objectionable pieces of legislation attempted to be forced through at the present session. The measure provided that the city of Milwaukee be authorized to engage in the plumbing business. It was purely a socialistic measure, Senator W. R. Gaylord being one of the few Social Democrats in the Legislature, and the bill had been reported favorably by the committee on public health. Senator E. E. Page, of Milwaukee, came to the rescue, however, and the bill was indefinitely postponed. He precipitated a long debate by asking the author to explain the measure and the fallacy of it became all too clear when Gaylord tried to do so. This is the first time an effort has been made in this country to establish **municipal trading,** as it is known in England, where it has been in operation in several cities for a number of years and where it has caused a great deal of annoyance to legitimate business interests. **Master plumbers should be on the lookout for attempted legislation of this kind.** The Gaylord bill was worded as follows:

A Bill

To create section 925—224a, relating to permission for cities of the first class to establish, operate and maintain a general plumbing trade.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

Section 1. There is added to the statutes a new section to read: Section 925—224a. 1. Every city of the first class, whether operating under a general or special charter, is hereby authorized and empowered by a majority vote of the common council of such city, in order to carry on a general plumbing trade, to establish, operate and maintain a general plumbing business, within such municipality, to make any contract necessary to carry on said business, and to charge the expense of any such plumbing, when necessary, to the property upon which said plumbing is done.

2. The common council of every such city is hereby authorized to formulate and adopt such regulations concerning the purchase, sale and supply of plumbing materials, or concerning any matter necessary to carry on such trade, as it may deem just and proper.

Section 2. Any statute conflicting herewith is hereby repealed.

PLUMBING BILL STILL IN GOVERNOR'S HANDS.

San Francisco, Cal.—The State Plumbing Bill, recently passed by both houses of the Legislature, is still in the hands of the governor, and there is considerable speculation as to whether he will sign it or not.

Southern Notes

Gastonia, N. C.—Geo. G. Glenn has engaged in the plumbing business here and is anxious to hear from manufacturers and dealers in that line.

Charlotte, N. C.—The T. C. Toomey Company has been busily engaged with a $50,000 heating installation in the new Richmond high school at Richmond, Va.

Charlotte, N. C.—The J. J. Breen Plumbing Company has contracts under way for plumbing installations in new residences on Lyndhurst and Euclid avenues.

Charlotte, N. C.—J. A. Haley has recently executed excellent plumbing installations in the Masonic Temple building at Raleigh, N. C., and in the new Y. M. C. A. at Durham, N. C.

Shelby, N. C.—The Shelby Plumbing and Electric Company is a new concern to engage in business here under the management of Mr. Dudley. It will be conducted as a branch of the Acme Plumbing Company, of Charlotte, N. C.

Spartanburg, S. C.—S. F. McCants has an excellent assortment of work on his books. His contracts include plumbing installations in the Inman and Crescent

BLANK FOR

Report of an Award of Heating or Plumbing Contract

(Cut out, fill in and mail promptly)

DOMESTIC ENGINEERING
Chicago

We have been awarded the contract for

_____
plumbing or heating

the _____, the
kind of building

amount of the contract being $_____

Owner's name _____

Address _____

Architect's name _____

Address _____

General Contractor's name _____

Address _____

Our own name _____

Address _____

Mills, in the new Johnson and Wofford buildings and in seven new residences.

Durham, N. C.—L. C. Richardson has a choice contract in progress in that of the plumbing in the new Arcade building on Main street. He recently completed a splendid equipment of plumbing fixtures in the Corcoran Hotel here.

Spartanburg, S. C.—W. J. Merrill has under way an installation of plumbing and heating work in the library building for Wofford College. In addition to this he has on hand contracts for plumbing work in a new apartment house and in four new residences.

Greenville, S. C.—The Barr Hardware Company has nearing completion a splendid contract in that of the plumbing and heating in the new Staray Hotel in this city. Added to this can also be mentioned plumbing and heating installations in the U. S. Postoffice in Greenville and in large mills at Greenwood and Lawrence, S. C.

E. De Forest Winslow.

New Jersey

Orange, N. J.—L. W. Butterfield has secured the contract to install Broomell's system of vapor heating in the residence of Seth Sprague Terry, at Montclair, N. J.

Perth Amboy, N. J.—A. M. Smith & Bro. have been awarded the following fine bunch of contracts: For C. Jessen, two sets of plumbing, sewering and heating systems; one plumbing and sewering system for August Nielson; five sets of plumbing and sewering for the Eagle Construction Company, besides numerous other plumbing and heating contracts located at different points in the city.

Boston and New England

Woburn, Mass.—Shaw & Campbell have been awarded the plumbing and heating contract for the Choate Memorial Hospital.

Natick, Mass.—Fisk & Company report contracts for heating two dwellings, also a 26-room hot water contract and plumbing and heating for a school house in Sherburn.

Winchester, Mass.—Benjamin Edwards has opened a plumbing and heating business at 6 Thompson street. He has contracts on hand for the plumbing and heating of three dwellings.

Newtonville, Mass.—J. P. Doyle has purchased the interest of his partner, John W. Murray, and now has entire charge of the business at 82-A Bowers street, formerly run under the firm name of Doyle & Murray.

Winchester, Mass.—G. T. Davidson has been awarded two contracts of $1,500 each for the plumbing and heating of two dwellings on Oxford street. Three baths are to be installed in each and both houses are to have hot water systems of heating.

Boston, Mass.—Ingalls & Kendriken have the heating contract for the new ten-story office building which is in process of construction at the corner of Water and Devonshire street and are at present engaged in placing the boilers in position. They will also do the ventilating.

Gardner, Mass.—William P. O'Donnell, who was recently appointed plumbing inspector to succeed Patrick S. Carey, has now been named as agent of the board of health with an additional salary of $300. This gives him a total salary of $1,200. Mr. O'Donnell will make his headquarters in the office occupied by the board of health.

Watertown, Mass.—D. F. Keefe is just completing a $4,000 contract for plumbing for F. E. Stanley, of Newton. He reports the following plumbing contracts on hand: Two of $700 each for H. E. Mayo, both private residences; two flats of $500 each for Iliffe at East Watertown; one double house for C. H. Nelson of $500; four double flats at Brighton for Hodge & King, and one double flat for the same firm of $465, each at Watertown, and five stores for A. B. Webb at Waverly.

Pacific Coast

Copper Point, Ore.—Davis Bros. have opened a new plumbing shop here.

Portland, Ore.—J. F. Lynds has opened a new plumbing establishment in this city.

Arcata, Cal.—C. C. Crawford, who recently went out of the plumbing business, has resumed at the old place.

Cheney, Wash.—The plumbing firm of Bacon & Lewis has been dissolved and each of them will open a separate shop here.

Maricopa, Cal.—The rapid growth of this town has opened a field for a plumber here, and Max Grundlach, Jr., of Bakersfield, is planning to establish a branch of his establishment here.

San Francisco, Cal.—Bids are being invited for the excavation of a site for the new Hall of Justice, on the old Kearny street site, and this would indicate that it was the intention to commence work shortly on the rebuilding of that structure.

San Francisco, Cal.—Work on the salt water system for fire protection is progressing very rapidly and by the time the first shipments of pipe are received here it is expected that most of the cisterns in the downtown district will be ready for connection. Every possible effort will be made to get this system into working order at an early date and it is expected that when it is finished that insurance rates will immediately become more reasonable.

Government Work

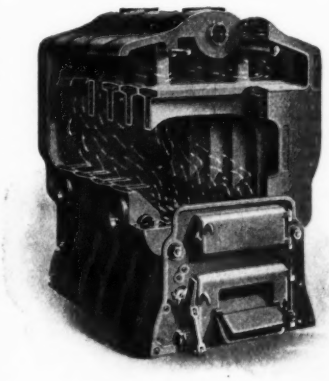
Washington, D. C.—Sealed proposals will be received at the office of the Supervising Architect until 3 o'clock p. m., April 28, 1909, for the construction, complete, of the U. S. Postoffice building at Kewanee, Ill., in accordance with the drawings and specifications.

Washington, D. C.—Sealed proposals will be received at the office of the Supervising Architect until 3 o'clock p. m., April 26, 1909, for the construction (including plumbing, gas piping, heating apparatus, electric conduits and wiring) of the U. S. Postoffice at Barre, Vt., in accordance with drawings and specifications.

Washington, D. C.—Sealed proposals will be received at the office of the Supervising Architect until 3 o'clock p. m., April 22, 1909, for the construction (including

The Satisfied User.

"It just about runs itself," said the purchaser of an Ideal-American outfit in speaking of his boiler. "Best purchase I ever made." "Completely satisfied." These comments of satisfied users of IDEAL Boilers means increased trade to the dealer.



IDEAL Sectional Water Boiler.

The merits of IDEAL Boilers and AMERICAN Radiators are many, but summed up in one statement mean simply, "Satisfaction to the Customer." The satisfied user is the best advertisement either the Manufacturer or the Trade could desire.

AMERICAN RADIATORS & IDEAL BOILERS

AMERICAN RADIATOR COMPANY

General Offices, 282-286 Michigan Ave., Chicago.

New York	Cincinnati	Cleveland	Atlanta	Brantford, Ont.	Denver
Philadelphia	Boston	Milwaukee	Minneapolis	Seattle	St. Louis
Pittsburg	Buffalo	Indianapolis	Kansas City	Omaha	San Francisco

plumbing, gas piping, heating apparatus, electric wiring and conduits) of the United States Postoffice at Willimantic, Conn., in accordance with the drawings and specifications.

Washington, D. C.—Sealed proposals will be received at the office of the Supervising Architect until 3 o'clock p. m., April 23, 1909, for the installation of a conduit and wiring system and extension of the present gas piping system in the U. S. Postoffice, Court House and Custom House at Newbern, N. C., in accordance with drawings and specifications.

Contracts Awarded

Los Angeles, Cal.—Eugene Murray has been awarded the steam heating contract in the new Hall of Records. Amount of contract, $35,437.14.

Rhinelander, Wis.—The Oneida Gas Company has been awarded the contract for combination gas and electric fixtures for the new $25,000 city hall.

Kenton, O.—Geo. A. Wagner has secured the contract for installing the new hot water heating system in the Catholic Church. The consideration is about $2,000.

Lincoln, Ill.—Jones, Koehnle & Company has landed the contract, amounting to $26,000, for installing the heating plant in the Natural History building at the University of Illinois in Urbana.

Scotts Bluff, Neb.—It is reported that the Katz-Crag Contracting Company, of Omaha, Neb., has secured a contract, amounting to $27,660, for the construction of a water works system in this town.

Milwaukee, Wis.—Charles Polacheck & Bro., of this city, has been awarded the contract for furnishing all fixtures, chandeliers and supplies for lighting the new $500,000 Milwaukee Auditorium. The price is $5,675.

Houston, Tex.—The Modern Plumbing and Heating Company, of 1113 Congress street, has been awarded the contract for the plumbing and gas heating equipment for two residences for the Wilson Realty Company.

Minneapolis, Minn.—Charles Wilkins & Company, of this city, have secured the contract for the heating and plumbing of the new school house at Monticello, Minn., at a cost of $6,500. There will be a direct radiation of 4,000 feet. The cost of the structure is estimated at $35,000.

St. Louis, Mo.—The Kremer-Moon Heating Company, of 1417 Olive street, St. Louis, has been awarded the hot water heating for the two-family house of J. R. Holder. This company also has a $3,200 contract from the U. S. Government for the hot water heating of the postoffice at Alton, Ill.

San Francisco, Cal.—H. Liebes & Company has awarded a contract to the Mechanical Dust Suction Company for the installation of a vacuum cleaning outfit in its new nine-story building now in course of erection on the old site on Post street, near Grant avenue. The work is to cost $1,740.

Chicopee, Mass.—The bids for installing the new heating apparatus in the manual training school were opened a few days ago and the Holland Company, of Springfield, was given the contract for $2,107. Other bidders were: William J. Hyland Mfg. Company, of Springfield, $2,691; Wyckoff & Lloyd Company, of Springfield, $2,828; Isaac Clifton Company, $3,355; Charles A. Ludden, of Chicopee, $2,689.

The long and short of it. Son and granddaughter of H. E. Hertner, Gerard, Kansas. Cannot quite muscle the tongs yet but expects to soon.

Trade Literature

From the Peters Pump Company, Kewanee, Ill: Gunther's Water and Steam Boilers, Catalogue No. 5, 24 pages, 6x9 inches, in an attractive mottled blue imitation parchment cover. The catalogue contains complete descriptions and numerous illustrations of this company's boilers, and also some good information under the headings of "Suggestions" and "Directions."

From the National Radiator Company, Johnstown, Pa.: Radiators, Boilers and Tank Heaters, Catalogue C, 112 pages 4½x7 inches, printed on highly glazed paper with a double cover of heavy brown paper, and containing numerous drawings and half-tone engravings of boilers, radiators and specialties with complete descriptions. The catalogue also contains considerable practical information valuable to those interested in these lines. It can be obtained on application, mentioning "Domestic Engineering."

From the Peerless Selling Company, Evansville, Ind.: "Catalogue B," containing illustrations and complete descriptions of the Peerless High Grade Water Closet Combinations and Vitreous China Sanitary Earthenware, 80 pages, 6x9 inches. The book is well printed on heavy enamel paper and only the very best half-

tone engravings have been used to illuminate its pages. The book has two frontispieces, one showing the Peerless Tank and Seat Works and the other the plant of the National Pottery Company, both at Evansville, Ind. Every page in the catalogue bears one or more illustrations of some product of the company, besides the concern's handsomely designed trade mark, "Peerless." Most space has been devoted to the Peerless closet combinations with low down and high tanks, but complete descriptions and illustrations are also given of the Peerless cup flush valve and ball cock, the "Don't Worry" seat, urinals and basins. The catalogue is a neat and valuable addition to the trade library of any contracting plumber and it will be sent free on application, mentioning "Domestic Engineering."

DISPOSAL OF SEWAGE FROM DISTILLERIES.

The sixth report of the British Royal Commission on Sewage Disposal was issued on March 6 and it deals particularly with the disposal of sewage from distilleries. The committee recommends as a standard of effluent: (1) That it should contain not more than three parts per 100,000 of suspended matter; (2) that it should be non-putrescible on incubation; and (3) that after being filtered through filter paper it should not absorb more than 1.5 parts by weight per 100,000 of dissolved or atmospheric oxygen in five days. This, it is contended, is a practical standard of purification; but in many places a lower standard would suffice.

The final conclusions arrived at by the commissioners are, that it is practicable to treat the waste liquids from distilleries, either on land or on filters, so as to produce a satisfactory effluent. Percolating filters are more efficient than contact beds, but it appears to be desirable first to dilute the waste liquids, and treat them with lime before filtering. Pot ale may be destroyed by heat, or it may be evaporated, and the syrup produced incinerated, by which means a manure is obtained which will sell at $25 per ton. Cost of treatment varies with local circumstances. In the case of distilleries in towns which are sewered, the liquid refuse should be allowed to enter the sewers, subject to certain safeguards and regulations.

Patents

915,981. Bent-Wood Tank. Stephen C. Mack, Trenton, N. J.

916,268. High-Pressure Connection for Fire Systems. William T. Cameron, Philadelphia, Pa.

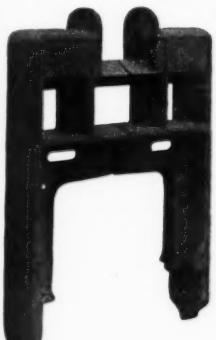
916,275. Sewer and Gutter Pipe Connection. William G. Cramer, Buffalo, N. Y.

916,283. Sink Stand or Shelf. S. Spencer Eccleston, Syracuse, N. Y., assignor of one-half to Arthur N. Brundage, Syracuse, N. Y.

916,297. Water Heater. David N. Gibson, Homestead, Pa.

916,301. Flexible Pipe Joint. Warren A. Greenlaw, Melrose Highlands, Mass., assignor to the Greenlaw

Practical Advantages of Divided Sections



Intermediate Sections 25 Series Improved Capitol Boiler.

Have you considered the real economy of Divided Sections in Capitol Boilers?

Less labor is required to set Capitol Boilers on account of the divided or half sections—on large boilers the entire expense of one man can be saved.

A Capitol Boiler can be set in some places where the sections of most boilers could not be handled.

Proper allowance is made for expansion and contraction, extending the life of the boiler to the maximum.

These points are vitally important to you—whatever you save means profit.

United States Heater Company.

General Offices and Works: Fort St. and Campbell Ave., DETROIT, MICH.

Branches:

DETROIT	139 Jefferson Ave.
NEW YORK	129 Worth St.
CHICAGO	34 Dearborn St.
KANSAS CITY	120 W. 11th St.
OMAHA	916 Farnam St.

Sales Agencies:

NORFOLK & RICHMOND, VA., Virginia-Carolina Supply Co.
MINNEAPOLIS, MINN., Plumbing & S. F. Supplies Co.
ST. LOUIS, MO., L. M. Rumsey Manufacturing Co.
DENVER, COLO., Kellogg & Stokes Stove Co.

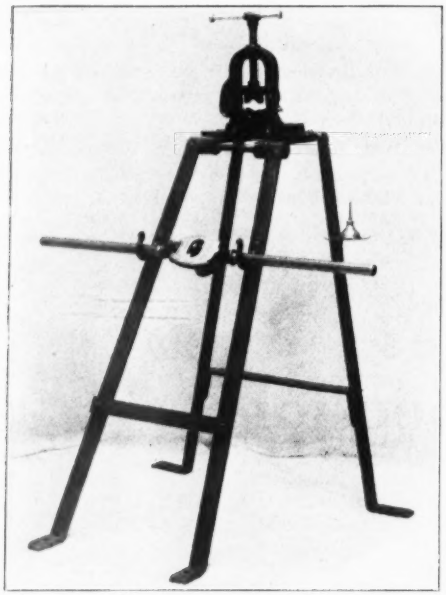
STOP

using that old-fashioned Vise Bench

USE

the new kind made of Wrought Iron, strongly riveted.

CAN BE CARRIED EASILY BY A BOY. Will Last a Lifetime.



The Portable Vise Bench

It does not take up much room when not in use. Can be made ready for use in a few moments. Will pay for itself in a short time in saving of transportation charges. With it you can make a saving and do better work and do it quicker.

SAVES TIME, TROUBLE, EXPENSE

Send for Circular and Prices

SOLE DISTRIBUTORS

Jay-Zee Sales Co.

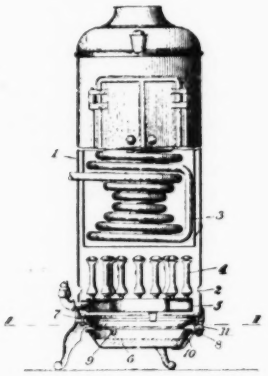
150 Nassau Street, New York City

Manufacturing Company, Boston, Mass., a corporation of Maine.

916,340. Water Trap or Strainer. Frederick A. Lewis, Wichita, Kan.

916,354. Service Box Lid. Henry Mueller, Philip Mueller and Anton C. Schuermann, Decatur, Ill., assignors to H. Mueller Manufacturing Company, Decatur, Ill., a corporation of Illinois.

916,292. Heater. Reynolds C. Frampton, Swissvale, Pa., assignor to Pittsburg Water Heater Company, Allegheny, Pa., a corporation of New Jersey. Of the seven claims made for this invention the first one



reads as follows: "The combination in a water heater provided with a set of burners and a casing, of a hinged drip pan mounted beneath the casing and yieldingly held in position to collect and hold the condensation from the heater and adapted to incline downwardly and discharge when a sufficient quantity of water collects therein."

916,364. Heating System. Andrew G. Paul, Boston, Mass.

916,376. Pipe Wrench. Charles W. Sievert, Los Angeles, Cal.

916,403. Three-Way Valve. William Adamson, Rock Island, Ill.

916,499. Automatic Faucet. Andrew P. Tallmadge, Washington, D. C.

916,559. Heating System. Jefferson D. Jones, Brownwood, Tex.

916,591. Faucet. Charles A. Pride, Tompkinsville, N. Y.

916,553. Closet Seat. William L. Heap, Grand Haven, Mich., assignor to William Heap & Sons, Grand Haven, Mich. Of the two claims made for this invention the most comprehensive is as follows: "A water closet seat, composed of complementary curved sections having mortises formed in their meeting ends of less width than the sections, and the mortised portions vertically apertured, the apertures extending in proximity to the section tops, a single removable connecting member lying in each pair of mortises, the member ends being each apertured to partially register with the section apertures, and vertical dowel pins engaging the apertures and acting upon insertion to draw the sections together, forming a tight joint."

XU